
Unicenter

NetMaster Network Automation User Guide

Version 5.0



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The Software That Manages eBusiness



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Introduction

The key issue in network operations is to maximize service availability for end users. As networks become increasingly diverse and complex, the challenge for an enterprise is to ensure the availability of critical services and SNA resources when required. The Unicenter NetMaster Network Automation product helps you operate and maintain the availability of large networks.

This chapter introduces the product and provides an overview of the functions that help you operate your networks.

What the Product Offers

The product is an operations automation and management application. It can be implemented on one or more computers in an organization, depending on the operations requirements of the organization.

The product enables you to automate the operation of the SNA network resources in your organization. The product establishes a *region* that uses the information in a knowledge base to automate your organization's operations processes.

The product enables you to implement a service-driven operations perspective of the SNA resources you want to manage. You can group resources into SNA groups and services, and automate the operation of those groups and services.

From the region, you can monitor the status of services, SNA groups, and resources, and act on them when problems occur.

The product provides focal point management to support multisystem operation (that is, management at a focal point with subordinates feeding information to it). Multisystem support enables you to monitor and control the resources from a single terminal.

The product establishes a region on your system that does the following:

- Performs the necessary actions to maintain the availability of services and SNA resources, based on information stored in a **knowledge base**
- Monitors and controls the defined services and resources
- Manages the message flow in your network
- Consolidates VTAM messages to a single console

How the Product Helps You Manage Your SNA Resources

When you start up the product region on a system that contains a VTAM domain, you can monitor the SNA resources controlled by that domain immediately. The region monitors those resources and takes appropriate recovery actions to maintain the availability of those resources. This basic feature enables you to manage your networks on a resource basis.

The product obtains the status of resources from the *VTAM message flow*. It then compares the actual status of a resource with the desired state of that resource and responds accordingly by using the information in the knowledge base.

Individual resource management, however, does not provide you with a view of the services you are providing to the different business units in your organization. This product can help you implement views of your SNA resources from a service-driven operations perspective. You can group resources by business function and manage those SNA groups. You can monitor the groups by using the status monitor or the graphical monitor.

This product also provides an event management facility that enables you to manage (for example, suppress) unwanted messages. You can also monitor VTAM messages in a multisystem environment.

Message Processing

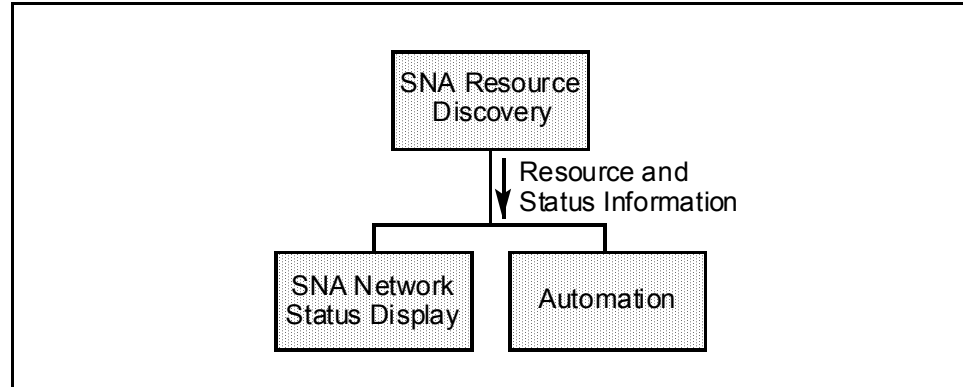
The region gains information about the SNA resources it manages by interpreting the primary program operator (PPO) message flow.

Note: If you are running the Unicenter NetMaster Network Management for SNA product in the same region as this product, you also have available a CNM message flow. See the *Implementation Guide* for information about how to set up the CNM message flow.

The region intercepts the messages and resends them by using the resource name as the job name, and 17, 18, or 19 as the MVS routing codes. See the appendix [“SNA Resource Message Routing Codes”](#) for information about the routing codes.

Components

The main components of the product are illustrated in the following diagram.



The functions of the components are as follows:

Component	Function
SNA resource discovery	Discovers SNA resources in the local VTAM domain to build the SNA network model and monitors their status.
SNA network status display	Provides a monitoring and control facility for the SNA resources in the network model. This component enables you to perform basic management of your resources.
Automation	Enables you to define the service policies, maintains the desired availability of those services, and provides the monitoring and control facility that enables you to operate those services. This component enables you to manage the SNA resources from a service-driven operations perspective. (See the <i>Automation Services Common User Guide</i> for more detailed information about this component.)

Features

This product offers the following features that help you manage your SNA resources:

- You can start monitoring SNA resources immediately. You do not need to define the resources to the knowledge base as for the automation component.
- You can obtain an enterprise-wide view of the SNA resources by using the SNA network summary display.
- You can access other products for problem determination by using commands.
- You can define filters that enable selective display of SNA resources.
- You can customize the stored operations methods for an SNA resource through SNA resource model.
- You can define SNA resource tags that provide a more meaningful description of an SNA resource.
- You can manage the SNA resources from a service perspective by grouping them in SNA groups and including these groups in services.

Multisystem Support

The product provides focal point management to support multisystem operation (that is, management at a focal point with subordinates feeding information to it).

You can link regions together to provide you with an enterprise view of the managed resources, messages, and alerts. You can monitor and control all the services and resources defined in the linked regions from a focal point region.

In a multisystem environment where each region manages the local resources, failure of one region does not affect the automated operation of resources on the other systems, and you can still have an enterprise view of the resources managed on those systems.

For information about how to implement your multisystem environment, see the *Automation Services Administrator Guide*.

Focal Point Regions

From a focal point region, you have visibility of all the managed services and resources.

Subordinate Regions

From a subordinate region, you have visibility of the locally managed resources only. By using subordinates, you reduce the amount of traffic in the multisystem environment.

About This Guide

The key to automation is to maximize the availability of services and resources to the business groups within the enterprise. This guide describes how to use the product to ensure the availability of information systems (IS) services required by the business groups.

This guide provides basic information about how to use the product to manage your SNA resources and events. Use this guide to find out how to use the product. See the *Automation Services Common User Guide* for detailed information about the Automation Services functions that support this product.

Before you can perform the tasks described in this guide, the region should already have been established. See the *Installation and Setup Instructions* for information about how to start and establish the region.

What You Should Know Already

This guide is for operations analysts and operators working in the IS group who need to automate and manage the processes of operating the networks.

You should be familiar with your operations environment, and with the service and SNA resource availability requirements at your site.

User Action Conventions

This guide uses the following conventions when describing user actions:

- **Bold** characters indicate literals entered by you.
- You select **menu options** at the Select Option ==> prompt on the second line of a menu. Type the option code (for example, **M** for the Monitors : Primary Menu), and press ENTER.
- You enter **commands** at the ==> prompt on the second line of a panel. Some commands may be valid only on certain panels. To enter system commands, type **CMD** at the ==> prompt and press ENTER. The Command Entry panel is displayed. You can now enter system commands (for example, **SYSCMD D NET,APPLS**).

Frequently used commands such as EXIT and SAVE are assigned to function keys. Press the appropriate function key to execute these commands.

Enter used in conjunction with commands means: type the command at the ==> prompt, and press ENTER.

- You can apply **actions** to listed items (if the list is an action list, such as the SNA group list). You can apply actions such as browsing, copying, or updating to individual items. Press your New Line key to move the cursor down to the required item and enter the action code (for example, **U** for update) beside the item.

Enter used in conjunction with actions means: position the cursor beside the required item, type the action code, and press ENTER.

- You can enter options, commands, and actions in either uppercase or lowercase.
- Use the TAB key to move the cursor from field to field **across** a panel. Use the New Line key to move the cursor from field to field **down** a panel.

Getting Started

You interact with the region through a user interface that comprises menus, lists, and data entry panels.

Accessing and Leaving the Region

You might have access to one or more regions. This depends on whether your organization has set up a single system or a multisystem environment.

To access the region, you must log on to the region. The logon procedure is the same whether you are logging on in a single system or a multisystem environment. Before you can log on to a region, you need a user ID and password. Ensure that your system administrator has defined your user ID to the region and has allocated the relevant level of authority.

The *Automation Services Administrator Guide* contains information about defining the user access requirements for a region.

Logging On

To log on to a region, type your user ID and password at the logon panel and press ENTER. Here is an example of the primary menu.

```
SOLVPROD----- Unicenter NetMaster : Primary Menu -----  
Select Option ===>  
  
M   - Monitors                               Userid USER01  
H   - Historical Data                         LU      NMMAF016  
U   - User Services                          Time    09.15.29  
O   - Operator Console Services              MON 17-SEP-2001  
A   - Administration and Definition           OPSYS   05390  
X   - Terminate Window/Exit                  Window  1
```


If Region Initialization Is Still in Progress

If the Initialization in Progress panel is displayed on your screen instead of the primary menu, the initialization of the region is still in progress. Press F3 (Exit) to exit to the primary menu.

The *Automation Services Administrator Guide* describes the initialization process.

If the System Image Is Still Being Loaded

If the local system image is still being loaded, the primary menu contains the **LS** option. You can select this option to monitor the loading process. You can also perform functions that do not depend on an active local image (for example, working with knowledge base definitions).

Logging Off

To log out of the region from any panel, enter **=X** at the **==>** prompt. This ends your current session.

If you are at the primary menu, enter **X** at the Select Option **==>** prompt to end your current session.

Note: You can have two sessions for each logon to a region. If you have two sessions, repeat the procedure to end the remaining session to log off from the region. ([Working in Two Windows](#) in this chapter describes how to use the two session windows.)

Accessing the Region From a Local Terminal

When VTAM is not active and you have a local terminal that can access the region, you can log on to the region from the local terminal and have full use of the user interface. For information about how to implement this type of terminal, see the *Automation Services Administrator Guide*.

Accessing the Region From the System Console

When VTAM is not active and you do not have a local terminal that is attached to the region, you can access the region from the system console. Although you do not have the normal user interface, you can issue commands to the region by using the \$RMCONS NCL procedure; you can view the transient logs by using the \$RMCLOG NCL procedure. See the *Automation Services Common User Guide* for information about these procedures.

Accessing the Region by Telnet

When VTAM is not active and the region is set up for Telnet access, you can log on to the region from a terminal.

To access a region that supports Telnet connections, use the IP address and port number that have been set up. For information about how to implement Telnet access, see the *Automation Services Administrator Guide*.

To get the address and port number, enter **SHOW TCPIP** in the region to which you plan to connect.

Changing Your Password

Your password for logging on to a region is verified by the User Access Maintenance Subsystem (UAMS).

The subsystem lets you change your password, or prompts you to change your password when it has expired after a period. You can change your password at any time after you log on to a region. The change becomes effective the next time you log on to the region.

Note: Your installation might have linked UAMS with an external security system, such as Resource Access Control Facility (RACF). If this is the case, your system administrator will tell you of any special considerations that apply when changing your password.

In a multisystem environment, the administrator might have set up the environment for the synchronization of UAMS user definitions and passwords. Changed passwords are then synchronized across connected regions.

Change your password to the region as follows:

1. Enter the **=U.P** path at the Command **==>** prompt to access the panel that enables you to change your password. The User Password Maintenance panel is displayed.

```
USER01----- UAMS : User Password Maintenance -----Page 1 of 2
Command ==>                                           Function=Request

User ID ..... USER01

Current Password .....
New Password .....
```

Note: You can press F12 (Cancel) to cancel the operation at any time before Step 4.

2. Type your current password in the Current Password field and the new password in the New Password field. The fields do not display the entered information.
3. Press F3, and then reenter the new password in the displayed Re-enter New Password field.
4. Press F3 (File) to file the changed password.

If UAMS synchronization is enabled, a Linked Regions UAMS Update Report panel is displayed when you save your changed password. The panel reports the success or failure of the password change in the connected regions.

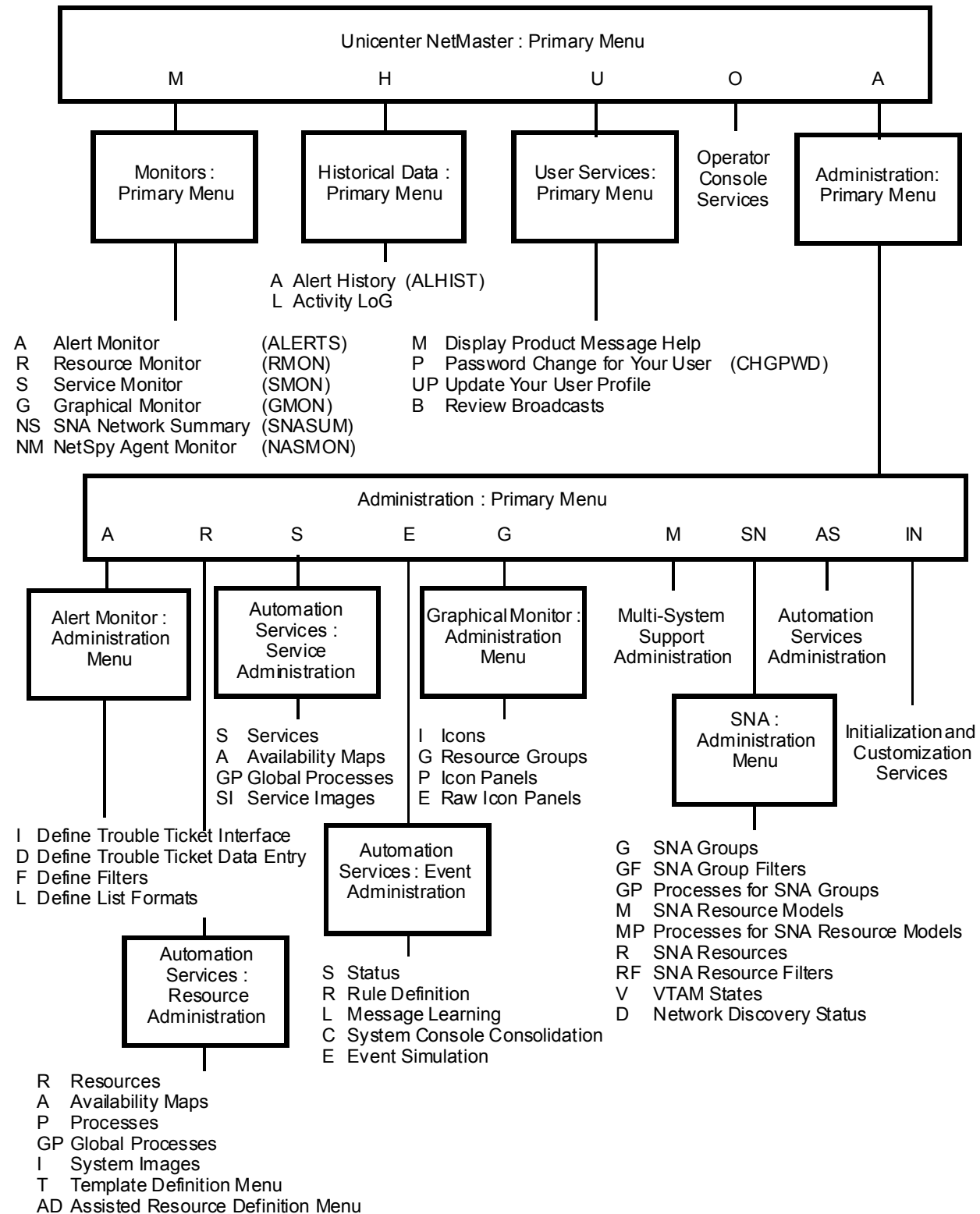
If synchronization fails, ask the administrator to reset your password when the problem is corrected.

The Menus

The user interface includes several menus. The region issues an error message if you try to use a function that you are not authorized to use.

Note: In a multisystem environment, the following menus are not applicable in subordinate regions: the service definition menu and the system console consolidation menu.

The hierarchy of the menu panels is illustrated in the following diagram. Shortcuts to the menu options are shown in parentheses. For information about shortcuts, see [Selecting a Function Directly—Using Shortcuts](#) in this chapter.



Accessing Functions

You access functions in the region through the user interface menus by doing one of the following:

- Selecting an option from each menu that leads to the function
- Specifying the shortcut to go to the function directly
- Specifying the path to go to the function directly

Selecting an Option

You select an option by typing the option code at the Select Option ==> prompt and pressing ENTER. For example, typing **A** at the Select Option ==> prompt on the primary menu and pressing ENTER takes you to the Administration primary panel.

Selecting a Function Directly—Using Shortcuts

You can jump to the panel of a function directly by using shortcuts. You can specify the shortcut at an ==> prompt in one of the following ways:

- Specify */shortcut-name* to retain the current panel on return (panels nested).
- Specify *=/shortcut-name* to close the current panel and return to the primary menu on return.

[The Menus](#) in this chapter summarizes the functions provided by the product. Each function is preceded by a one- to three-letter option, and may be followed optionally by a shortcut, displayed in turquoise.

If you do not remember a shortcut, enter */* or *=/* to list the shortcuts from which you can select one.

Accessing a Function by Using `/shortcut-name`

Important! *If your current panel does automatic updates and you no longer need this information, use `=/shortcut-name` rather than a nested shortcut. This saves storage and resources because the region does not need to maintain a display that you no longer need.*

To select the function you want, enter its corresponding shortcut, preceded by the slash (/) character, at a `===>` prompt, and press ENTER.

For example, to access the Resource Administration menu, type `/RADMIN` at the `===>` prompt on your current panel, and press ENTER. When you have finished with the menu, press F3 to redisplay your previous panel.

When you access a function by using its shortcut, your current panel is retained. When you press F3 to exit out of the function, this panel, with any updates, is restored. By using shortcuts, panels can be nested to a maximum of 64 levels.

Accessing a Function by Using `=/shortcut-name`

Whenever you have finished with your current panel, you can access the next function by prefixing the shortcut call with the equals (=) sign. This goes directly to the function without retaining the current panel and closes all other nested panels in this window.

For example, to access the Resource Administration menu without retaining the current panel, type `=/RADMIN` at the `===>` prompt on your current panel, and press ENTER. When you have finished with the menu, press F3 to display the primary menu.

Accessing a Function That Does Not Have a Shortcut

You can combine a shortcut with option codes to form a path to access a function that does not have a shortcut itself. For example, to access the list of resource definitions, you can enter the `/RADMIN.R` path.

Selecting a Function Directly—Skipping Panels

You can jump to the panel of a function directly by specifying the exact path to that panel. Construct the path by linking the options you need with periods. Depending on which panel you start from, you specify the panel path in one of the ways described in the following sections.

Accessing a Panel That Is Lower in the Panel Hierarchy

If you start from a menu and want to access a panel lower in the panel hierarchy, specify the path as it is. For example, if you are at the primary menu and want to access the Resource Administration menu, type **A.R** at the Select Option `===>` prompt and press ENTER.

Accessing a Panel That Is Higher in the Panel Hierarchy

If you want to access a panel that requires you to pass through a panel higher up in the panel hierarchy, you must precede the path specification with the equals sign (=). The = character brings you back to the primary menu and then to the required panel. You can specify such a path at any `===>` (or `=>`) prompt. For example, if you are at the resource monitor and want to access the Resource Administration menu, type **=A.R** at the Command `===>` prompt and press ENTER.

To return to the primary menu, enter `==`.

Accessing a Panel That Requires Input Data

If you want to access a panel that requires you to enter data, you can enter the data by separating them from the path by a semicolon (;). For example, if you are at the primary menu and want to access the resource definitions in Version 1 of the FT1 system image, type **A.R.R;FT1;1** at the Select Option `===>` prompt and press ENTER.

Using Lists

Here is an example of a list.

SOLVPROD----- Automation Services : Availability Map List -----SOLV-0001	
Command ==>	Scroll ==> PAGE
	S/B=Browse U=Update C=Copy D=Delete LR=ListAttRes N=NextTimers
Map Name	Description
ALWAYSACT	Availability Map for SOLV19
BACKUP	Stop for backups, Act/Auto after
BACKUP3	Stop for backups, Act/Auto at 0700
BACKWKLY	Stop for backups, Act/Auto after
SOLVPROD	SOLVPROD only
INACTIVE	Stop for backups, Inact/Man after
MANAUTO	Availability Map for SOLV1
MANINACT	Always manual and inactive
ONEBACKUP	Backup once a week only
REFRESH	Stop/Start tasks that need refresh
END	

Lists comprise a series of items from which you can select, or against which you can perform actions. The fourth line on a panel describes the actions that can be performed on the listed items.

There are four different types of lists:

- Action lists—allow you to apply *actions* to one or more listed items. Enter the required action code beside the appropriate records.
- Single select lists—allow you to select one item from a list (for example, the list of valid values for a data entry field) by:
 - Entering the **S** (Select) action code beside the item
 - Moving the cursor to a position anywhere in the line containing the item you want to select and pressing ENTER
- Multiple select lists—allow you to select one or more items in a list (for example, the list of panels that you use to customize your user profile).
- Numbered lists—allow you to select a single item from the list by entering the appropriate number at the ==> prompt (for example, the list of valid values for a data entry field).

If a list is longer or wider than one panel, you can scroll vertically or horizontally, as appropriate.

Scrolling

When the listed information cannot fit onto the screen, use scrolling to access the off-screen information. You can scroll vertically and horizontally.

Scrolling Vertically

Use the F8 (Forward) or F7 (Backward) function key to scroll the displayed information forward or backward by the amount displayed at the Scroll ===> prompt. The following table shows the valid scroll amounts.

Scroll Amount	Action
C (or CSR)	<p>If scrolling forward, the line on which the cursor is currently positioned is moved to the top of the screen.</p> <p>If scrolling backward, the line on which the cursor is currently positioned is moved to the bottom of the screen.</p>
D (or DATA)	<p>The display is scrolled one full page, less one row, in the specified direction.</p> <p>If scrolling forward, the last line of the current page is displayed as the first line on the next page.</p> <p>If scrolling backward, the first line on the current page is displayed as the last line on the next page.</p>
H (or HALF)	The display is moved half a page in the specified direction.
M (or MAX)	The display is moved to the beginning or the end of the displayed information, depending on the function key (Forward or Backward) used.
P (or PAGE)	The display is moved one full page in the specified direction.
<i>n</i>	The display is moved <i>n</i> lines in the specified direction.

You can also enter a temporary scroll amount at the Command ===> prompt (for example, Command ===> 5). When you press the F7 (Backward) or F8 (Forward) function key, the displayed information is scrolled by the specified value *once only*.

Scrolling Horizontally

Use the F11 (Right) or F10 (Left) function key to scroll the displayed information to the right or to the left.

Searching for an Item in Retrieved Information

You can search for specific items in the retrieved information by using the F5 (Find) function key or the LOCATE command.

Using the F5 (Find) Function Key

The F5 (Find) function key enables you to find a particular occurrence of text in the retrieved information. Enter the text you want to find, and press F5. If the text contains more than one word, enclose the text in quotation marks.

You can press F5 again to find the next instance of the text, and so on.

You can enhance the Find function in the following ways:

- Expand the search beyond the columns currently displayed by using the FMODE command
- Change the number of records searched between prompts by using the FPROPT command

For information about the FMODE and FPROPT commands, press F1 (Help).

Using the LOCATE Command

The LOCATE command enables you to locate a particular record in a list. Enter **LOCATE** or **L** followed by a text string mask. The command locates the first record name that matches the mask. The following screens show you how to locate a record in a list where the SNA Group Name value starts with the letter P.

```
SOLVPROD----- ResourceView : SNA Group List -----27
Command ==> L P                                     Scroll ==> PAGE

. System Image -----
| System Name ...+ SOLVPROD      Version ...+ 0001      |
|-----|
. Resources -----
| S/B=Browse U=Update C=Copy D=Delete R=Relate RG=Icon Resource Group |
| SNA Group Name      Description                                     |
| ABBOTSBURY          ABBOTSBURY branch resources                 |
| ASCCOT              ASCCOT branch resources                     |
| BACALA              BACALA branch resources                     |
| BADDAGININIE        BADDAGININIE branch resources               |
| CABARITA            CABARITA branch resources                   |
|-----|
```

```
SOLVPROD----- ResourceView : SNA Group List -----27
Command ==>                                     Scroll ==> PAGE

. System Image -----
| System Name ...+ SOLVPROD      Version ...+ 0001      |
|-----|
. Resources -----
| S/B=Browse U=Update C=Copy D=Delete R=Relate RG=Icon Resource Group |
| SNA Group Name      Description                                     |
| PADBURY             PADBURY branch resources                 |
| PADDINGTON          PADDINGTON branch resources               |
| QUAAMA              QUAAMA branch resources                   |
|-----|
```

Using Data Entry Panels

Each record in the knowledge base is displayed and maintained through a sequence of panels on which you enter the data for that record.

Switching to UPDATE Mode

Many definition panels enable authorized users to switch from the BROWSE mode to the UPDATE mode by pressing F4 (Edit). You can then edit the displayed information.

Entering Data

On a color screen, mandatory fields that you must complete are colored white. Optional fields, which you can complete as and when required, are colored turquoise. Both types of fields can be prompted fields that provide you with a list of valid values, from which you can choose one.

Prompted Fields With a List of Valid Values

Many fields on the data entry panels are linked to lists containing the values that you can choose for the field. These fields are called prompted fields. Most, but *not* all, prompted fields are identified by a plus sign (+).

Enter ? in a prompted field to display the value list, which could be either a numbered list or a single select list.

You can prefix the question mark (?) with one or more characters. The displayed list is then restricted to values that start with those characters. For example, S? displays a list of values that start with S.

Validating and Filing Data

During data entry, you can press ENTER to validate your data. Validation also occurs when you try to:

- Access another panel (for example, when you press F8 (Forward) to access the next panel)
- Save your entered data (for example, when you press F3 (File) to save a definition)

When you have finished entering data, you can do one of following:

- Press F3 (File) to save the data and exit the panel.
- Press F4 (Save) to save the data and remain on the panel. When adding definitions, this enables you to quickly create other similar definitions, minimizing the typing required.
- If you do *not* want to save the data, press F12 (Cancel) to exit the panel.

Moving Between Panels

Some functions lead to a series of data entry panels (for example, when you update a resource definition).

You can use one of the following methods to move through these panels, depending on what you need to do:

- Selecting all panels—you might want to access every panel. All the panels are listed on a Panel Display List panel (for example, the panel that lists the resource definition panels). Enter **S** beside the name of the panel you want to access first, or enter the number that identifies that panel in the panel sequence at the Command ==> prompt (for example, 1 for the first panel). The selected panel is displayed.

Press F8 (Forward) to scroll forward to the next panel; press F7 (Backward) to scroll backward to the previous panel.

When you finish entering the data, press F3 (File) to save the data. Press F12 (Cancel) if you decide not to save the data.

- Selecting specific panels from the Panel Display List—you might want to access certain panels only (for example, when you want to update only certain parts of a resource definition). All the panels required for a definition are listed on a Panel Display List. Type **S** beside the names of the panels you want to access. Once you have made all your selections, press ENTER to display the first panel you selected. Then press F8 (Forward) to scroll forward through the panels you selected. Press F7 (Backward) to scroll backward through the panels you selected.

When you finish entering the data, press F3 (File) to save the data. Press F12 (Cancel) if you decide not to save the data.

- Selecting a panel from another panel—if you want to skip to a panel that is not next in the sequence, and you know the sequence number of the panel you want, enter that number at the Command ==> prompt. The required panel is displayed.
- Using the Index Menu to select a specific panel—from any data entry panel, you can press F11 (Panels) to display the Index Menu panel. This menu lists all the panels available for that function. Use the Index Menu if you want to jump to a panel but do not know its place in the panel sequence.

Note: If you have selected two or more panels previously, pressing F11 (Panels) displays a list of the selected panels only. You can press F6 (AllPanel or SelPanel) to switch between the full list and the partial list.

Saving a Sequence of Definition Panels for Repeated Access

On a definition list panel, you can select more than one definition. You can then work on the selected definitions in sequence. Each definition can contain a number of definition panels. Normally, the list of panels is displayed on your screen for you to select each time you access a new definition. However, if you want to browse or update the same panels for each selected definition, you can save the list of panels you want, as shown in the following procedure.

As you move through the sequence of selected definitions, the panels appear on your screen according to the saved list. You do *not* have to select the panels again when you move on to the next definition.

The following procedure uses the SNA group definition panels as examples:

1. Enter the **=/SNADMIN.G** path to access the list of SNA group definitions. The SNA Group List panel is displayed.
2. Type **B** (Browse) or **U** (Update) next to the definitions you want to access. Use the F7 (Backward) or F8 (Forward) function keys to scroll through the list.
3. Press ENTER to select the definitions. The Panel Display List window is displayed, listing the group definition panels.
4. Type **S** next to the panels you want, and press F4 (SaveSeq) to save the list of selected panels.
5. Press ENTER to bring up the first selected panel.

When you finish with one group definition, the panels for the next definition are displayed in the same sequence.

Working With Definitions in the Knowledge Base

You can add, browse, update, copy, and delete the definitions in the knowledge base.

If you have several regions connected together, changes to the knowledge base in one region are automatically propagated to the knowledge bases in the other regions (that is, the knowledge bases are synchronized).

Important! *You should restrict the update of a definition to a single focal point region. Updating the same definition from more than one region may cause the linked knowledge bases to become unsynchronized.*

The activity log contains an audit trail of definition maintenance activities, identifying the time an activity occurs and the user responsible for that activity. The information is also displayed on the definition list panels. You can press F11 (Right) to view the information.

Adding a Definition

Add a definition as follows:

1. Access the list that displays the type of definitions you want to add.
For example, if you want to add a definition for an SNA group, you can enter the `=/SNADMIN.G` path to access the list of SNA group definitions.
2. Add the definition in one of the following ways:
 - Use the F4 (Add) function key.
 - Update a copy of another definition.

Note: To see the new definition, press F6 (Refresh) to update the list. You might also need to scroll the list to bring the new addition into view.

Browsing Definitions

Browse the details of a definition in read-only mode as follows:

1. Access the list of definitions.
2. Enter **B** beside the definition you want to browse.
If you wish to edit the definition, press F4 (Edit).
3. Press F3 (Exit) to exit the BROWSE panel when you finish browsing the definition.

To browse more than one definition, type **B** beside all the definitions you want to browse and press ENTER. If you select multiple definitions, pressing F3 (Exit) when viewing a definition exits the current definition and calls up the next definition.

Updating Definitions

Update a definition as follows:

1. Access the list of definitions.
2. Enter **U** beside the definition you want to update.

Note: You can press F12 (Cancel) to cancel the operation any time before Step 4.

3. Update the required fields.
4. Press F3 (File) to file the updated definition when you complete the panel.

To update more than one definition, type **U** beside all the definitions you want to update and press ENTER.

Copying Definitions

Copy a definition if you want to create a similar definition. Copy a definition as follows:

1. Access the list of definitions.
2. Enter **C** beside the definition you want to copy.

Note: You can press F12 (Cancel) to cancel the operation any time before Step 4.

3. Change the value in the field that uniquely identifies the new copy, and update the other fields as required.
4. Press F3 (File) to file the new definition when you complete the panel.

Note: When you are making a copy of a definition, the F4 (Save) function key enables you to continue creating independent copies of that definition. In Step 4, instead of pressing F3, press F4. The definition will remain open, and you can perform Step 3 again to define a new copy.

To copy more than one definition, type **C** beside all the definitions you want to copy and press ENTER.

Deleting Definitions

Delete definitions that are no longer needed as follows:

1. Access the list of definitions.
2. Type **D** beside the definitions you want to delete, and press ENTER. You are prompted for confirmation by either a panel or a message.

Important! *If the confirmation prompt is a message, only one confirmation message is displayed even if you are deleting more than one definition.*

Important! *If you wish to cancel the operation, you must press F12 (Cancel) before the next step.*

3. Press ENTER to delete the selected definitions.

Using Commands

The region supports line commands and primary commands, and system commands. You can issue commands to perform various actions, depending on your authority level.

Line Commands

A line command acts on a specific item in a list. For example, if you are using the status monitor and want to display the status of an SNA group called ATM, you enter **D** (for Display) beside ATM. The region issues the appropriate command to retrieve the status of the ATM group and displays this information on your screen.

To find out which line commands are available, enter a question mark (?).

The following example shows the response to the ? command.

SOLVPROD----- Automation Services : Command Definition List -----	
Command ==>	Scroll ==> PAGE
Use 'S' to select the required Command	
Command	Description
BLD	Rebuild an SNA Group
D	Display an SNA Group
Z	Zoom in on a SNA Group
ZS	Zoom in on a SNA Group (Sorted)
A	Activate a Resource
ASA	Set Actual State to Active
ASD	Set Actual State to Degraded
ASF	Set Actual State to Failed
ASI	Set Actual State to Inactive
ASU	Set Actual State to Unknown
B	Browse Resource Status and Modes
CFG	Invoke external Configuration appl
CHK	Request a Check of The Resource
CMD	Command Entry - Local or Remote System
DB	Database Administration for a Resource
DEL	Delete a Resource
DSA	Set Desired State Override to Active
F1=Help	F2=Split F3=Exit F4=Return F5=Find F6=Refresh
F7=Backward	F8=Forward F9=Swap F10=Left F11=Right

Select a line command from the list to issue the command.

Primary Command

A primary command affects general processing. You enter a primary command at the Command ==> prompt on a panel. For example, you can enter **=X** to exit from the region.

From the status and graphical monitors, authorized users can issue primary commands that enable processing in a region. For example, you may want to shut down the automated resources in a system image. To do this, enter **SHUTSYS** at the Command ==> prompt on your monitor and select the required system image.

To find out which commands are available, enter a question mark (?).

System Commands

You can issue system commands from either the Operator Console Services (OCS) window (also known as the message monitor) or the Command Entry facility. To access the Command Entry facility, enter **CMD** at a Command===> or Select Option ===> prompt, or press F5 from OCS.

Use the SYSCMD command to issue system commands. Other commands are also supported. To find out about those commands, type a question mark (?) and press F1.

See the *Management Services Command Reference* for detailed information about those commands.

Setting the Refresh Rate of a Monitor

You can set the refresh rate on the SNA network resources monitor. For information about the monitor, see the chapter "[Managing Individual SNA Resources](#)."

When you first access the monitor, the monitor screen refreshes one second after an alert activity, as indicated at the top right corner of your screen. When many alert activities occur, the screen might refresh every second, causing interruptions to what you are doing. You can use the F6 (RefDelay) function key to increase this refresh delay interval or to disable screen refresh altogether as follows:

- To change the refresh delay interval, type a number in the range 1 through 60 at the Command ===> prompt and press F6 (RefDelay). The interval is set to the corresponding number of seconds.
- To disable or enable screen refresh, press F6 (RefDelay). The state is displayed at the top right corner of the screen as follows:
 - Holding when refresh is disabled. You can press ENTER to manually refresh the screen.
 - RefDelay=*n* when refresh is enabled, where *n* is the previously specified delay interval. (You can also specify a new delay interval when you enable screen refresh.)

Getting Help

Online help is provided for panels and messages.

Online help is context-sensitive and available at different levels. When you are viewing a help panel, pressing F1 (Help) takes you to the next level of help available. Pressing F3 (Exit) takes you back to the previous level of help, or exits help and returns you to the application. Pressing F4 (Return) exits help and returns you to the application immediately.

Getting Help About a Panel

Panel-based online help includes information about what each panel is used for, how to complete the fields, the actions you can perform, and the use of available function keys. Use this online help to supplement the information in this guide while you are working in the region.

Press F1 (Help) to retrieve the online help for a given panel. When you are viewing a help panel, you can press F6 (HelpHelp) to find out how to use the help facility.

If the block of help text you require splits across two panels, use the arrow keys to move the cursor to the top or the bottom of the block and press F8 (Forward) or F7 (Backward) to bring the block into view.

Getting Help About a Message

While you are working in the region, you receive messages that advise you of various events. These messages might be providing information only (for example, informing you that an update has been successful). They might also alert you to errors (for example, if you try to enter an action that is not valid for a resource).

Each message has detailed online help text associated with it. Access the help text for a particular message in one of the following ways:

- If you are viewing a transient log, enter **H** beside the message.
- If you are at a panel and a message is displayed in red on the third line of that panel, move the cursor to that line and press F1 (Help).
- If you are using a Command Entry panel or OCS, you can do one of the following:
 - Move the cursor to the line displaying the message, and press F1 (Help).
 - Type the message ID at the => prompt, and press F1 (Help).
- Enter the **/CODES** shortcut to access the Messages and Codes Menu panel that enables you to obtain help on messages and on miscellaneous error codes.
- From a Command Entry or OCS panel, you can obtain help on additional error codes. Type **NETINFO** at the => prompt, and press F1 (Help) to display the NETINFO : Browse Utility File panel.

Customizing Your User Profile

You can customize your user profile to suit your own requirements. Your user profile sets up your view of the region. In a multisystem environment, your profiles in the connected regions are synchronized.

Enter the **=U.UP** path to access your user profile.

For a description of the profile parameters, see the online help or the *Automation Services Administrator Guide*.

Working in Two Windows

You can divide your screen into two logical windows. Each window operates independently of the other, enabling you to perform multiple functions concurrently. For example, you can have the status monitor in one window and the consolidated console in the other window.

Open a second window by using the F2 (Split) or F9 (Swap) function key.

Splitting a Screen

Using the F2 (Split) function key, you can:

- Split your screen horizontally and have one window above the other.
To split your screen horizontally, move the cursor to a line where you want to split screens and press F2 (Split).
- Split your screen vertically and have two windows side by side.
To split your screen vertically, move the cursor to any column on the bottom line and press F2 (Split).

Returning a Split Screen to Single Window Display

You can return a split screen to single window display in one of the following ways:

- Move the cursor to the first line on your screen, and press F2 (Split) to minimize the window. The window containing the cursor disappears, and the other window expands to full size.
- Enter =X to exit one of the windows. Your session with that window ends.

Swapping Windows

Using the F9 (Swap) function key, you can:

- Reverse the dimensions of the windows if you have two windows open and both are visible on the screen, and toggle between them
- Open a second full-screen window if you are currently operating with a single window open, and then toggle between them

SNA Resource Management

When you start up the region on a system that contains a VTAM domain, you have immediate visibility of the SNA resources controlled by that domain. The region monitors those resources and takes appropriate actions to maintain the availability of those resources. This basic feature enables you to manage your networks on a resource basis.

This chapter provides an overview of how to use the product to manage your SNA resources.

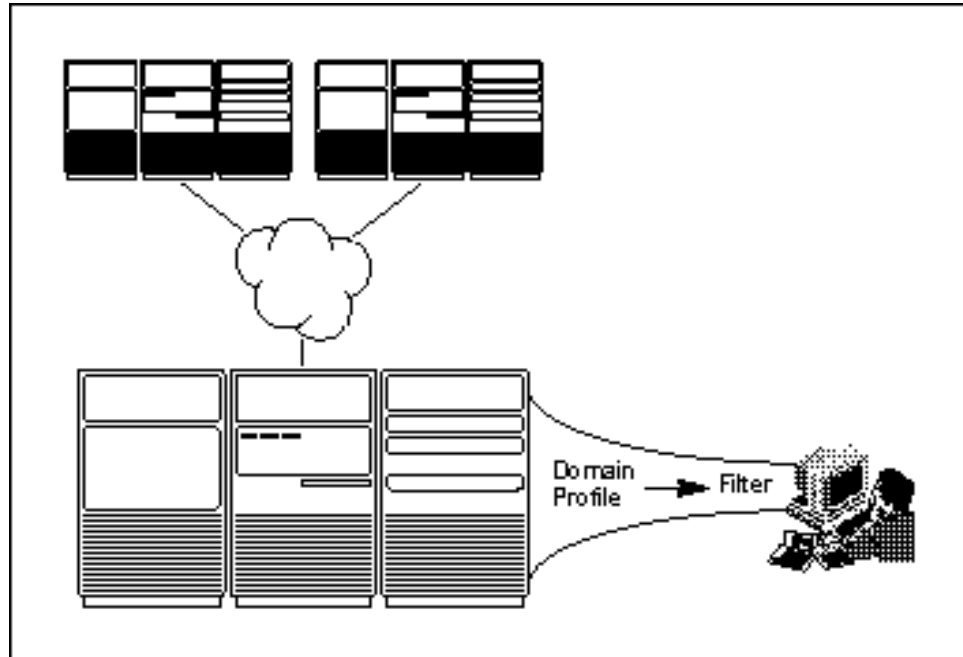
Managing SNA Resources

The region provides basic SNA resource management by using the SNA network model and the SNA resource models. The network model monitors the status of the SNA resources in a VTAM domain. The resource model stores the operations methods for a resource.

Your first level of visibility of the managed resources is through the SNA network summary display. The display provides a summary of the status of the resources by SNA resource types and actual states.

From the summary display, you can list the resources that are in a particular state. If a resource encounters operational problems, you can issue commands to access other products that can help you determine the cause of the problems.

You can use SNA resource filters to select which resources are displayed in the list. In a multisystem environment, you can select the VTAM domains you want to monitor, as shown in the following diagram.



The behavior of the monitored resources depends on a set of default resource models. You can change the behavior of a resource by associating it with a different model.

Basic resource management does not require you to create definitions in the knowledge base. It, however, does not give you a business view of the services you are providing. To carry network management further, you need to group resources into the services they provide by creating SNA group and service definitions. See the chapter "[Managing SNA Resources from a Service Perspective](#)" for information about how to set up service-based views of your networks.

SNA Resource States

The status of an SNA resource is governed by its desired state. The region ensures that the actual state of the resource corresponds to the desired state.

Desired States

The desired state of an SNA resource is set as follows:

If the resource ...	Then the desired state is ...
Does not belong to an SNA group or belongs to an SNA group that is not managed automatically	Based on the discovered resource VTAM state. The state can be changed by VTAM commands.
Belongs to an SNA group that is managed automatically	Set by the availability requirements of the group.

The desired states are ACTIVE and INACTIVE.

Actual States

The initial actual states of discovered SNA resources are derived from the resource VTAM states. To view the relationship between the states, enter the /SNADMIN.V path.

After a resource is discovered, its actual state is determined by the message rules in the associated SNA resource model.

The actual states are as follows:

- ACTIVE indicates that the monitored resource is available for use.
- DEGRADED indicates that the monitored resource is available for use but is **not** operating in the optimal condition. For example, if the region receives alerts from NetSpy SNA agents (part of the Unicenter NetSpy Network Performance product), the state indicates that an alert exists currently for the resource.
- FAILED indicates that the monitored resource failed and requires manual intervention.
- INACTIVE indicates that the monitored resource is unavailable for use.
- STARTING indicates that the monitored resource is being activated.
- STOPPING indicates that the monitored resource is being inactivated.
- UNKNOWN indicates that the region is unable to determine the actual state of the monitored resource.

SNA Resource Types

The types of SNA resources supported by the product are listed here.

Type	Name
Application program major node	APPL
Channel-attached (local) non-SNA terminal	LCL3270
Channel-attached (local) SNA cluster controller	LCLSNA
Cross-domain resource	CDRSC
Cross-domain resource manager	CDRM
Logical unit	LU
Network control program	NCP
Physical unit	PU
SNA line (NCP-PU session)	LINE
SNA link (SSCP-SSCP, SSCP-NCP, and NCP-NCP sessions)	LINK
SNA link station	LINKSTA
SNA major node	MAJNODE
Switched LU	SWLU
Switched PU	SWPU
System service control point	SSCP

SNA Resource Problem Determination Interface

When problems occur with SNA resources, operators can use commands to access other products for problem determination. These products include:

- Unicenter NetSpy Network Performance
- Unicenter NetMaster Network Management for SNA
- Unicenter Central Service Desk SOLVE:Problem
- Unicenter Central Service Desk SOLVE:Configuration
- NetView

SNA Network Model

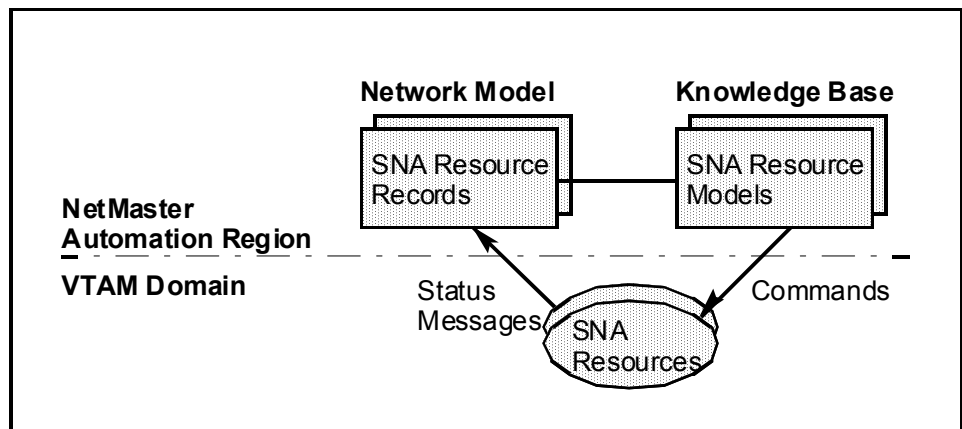
The SNA network model is a database that contains records of the local SNA resources. The model is built during initial resource discovery and updated as additional resources are discovered during operation.

SNA Resource Records

An SNA resource record is automatically created when an SNA resource is discovered and included in the SNA network model.

If you want to change the operations behavior of a resource, you update the SNA resource model association in the record. To list the records, enter the `/SNADMIN.R` path.

The following diagram shows the relationship between SNA resource records and models.



SNA Resource Models

An SNA resource model contains the operations methods for a particular SNA resource type (for example, SNA lines). Resource models are used directly by regions to maintain the desired state of discovered SNA resources.

The product supplies a default model for each type of SNA resource. That is, SNA resources of the same type use the same operations methods as defined in the corresponding model. You can create different models for the same resource type to handle different operations requirements.

These models enable you to automate actions that are more complex than those provided by the VTAM program.

An SNA model is a type of resource template. The supplied models reside in Version 0003 of the \$TEMPLAT system image. To list the models, enter the `/SNADMIN.M` path.

User-defined SNA Resource Tags

SNA resource tags enable you to provide a more meaningful description of the managed SNA resources. You can create filters to select resources based on these tags.

Managing Individual SNA Resources

The SNA network summary display is used to monitor and control network resources. The network summary displays SNA network resources on a network summary panel.

Accessing the SNA Network Summary Display

Note: If discovery of the SNA resources is still in progress, you cannot access the SNA network summary display. See [Responding to the Network Discovery Status Panel](#) in this chapter for information about how to handle this condition.

Enter the **/SNASUM** shortcut to access the SNA network summary display. An example of the summary display is shown. The display is updated whenever an event occurs.

SOLVPROD----- NetMaster Automation : Network Summary -----NET001									
Command ==>									
	Active	Inactive	Starting	Stopping	Degraded	Failed	UnKnown	Total	
APPL	1040	2	0	0	0	0	0	1042	
CDRM	2	1	0	0	0	0	0	3	
CDRSC	120	0	0	0	0	0	0	120	
LINE	28	5	0	0	0	0	0	33	
LINK	4	0	0	0	0	0	0	4	
LINKSTA	3	1	0	0	0	0	0	4	
LU	430	812	0	0	0	0	0	1242	
PU	7	33	15	0	0	0	0	55	
SWLU	667	15	0	0	0	0	7	689	
SWPU	31	0	0	0	0	0	1	32	
NCP	1	0	0	0	0	0	0	1	
SSCP	1	0	0	0	0	0	0	1	
MAJNODE	43	0	0	0	0	0	0	43	
LCLSNA	1	0	0	0	0	0	0	1	
LCL3270	0	32	0	0	0	0	0	32	
Total	2378	901	15	0	0	0	8	3302	
Resources in Recovery 0									
F1=Help	F2=Split	F3=Exit	F4=Return	F5=Filter					
		F9=Swap		F11=Domains					

Note: If no status is displayed, press F11 (Domains) to check that you have selected an active VTAM domain to monitor. See also [Multidomain Support](#) in this chapter.

The network summary displays the following information:

- SNA resource types down the left hand side of the table
- Available states for a resource across the top of the table and color-coded
- The number of resources of each state and type with the total in the last column
- The total number of resources that are in a particular state
- The number of resources that are in recovery

The information is displayed for resources discovered by the region based on a filter specified in the AUTOSNACNTL parameter group. (To access the list of parameter groups, enter the **/ICS** shortcut. For information about the AUTOSNACNTL parameter group, see the online help and the *Implementation Guide*).

Expanding the Network Summary

Each resource state in the network summary has an input field. You can access additional information about resources by using this input field. To access more detailed information about resources of a particular type in a particular state, perform the following steps:

1. Tab to the appropriate input field.
2. Press ENTER.

Resources of the type and state you selected are displayed. The resources are sorted by their name. An example of all active resources of type APPL is shown.

SOLVPROD- NetMaster Automation : Network Resources (ACTIVE-APPL'S) - RefDelay=5
 Command ==> Scroll ==> PAGE

S/B=Browse A=Activate D=Display T=Terminate SS=Static List ?=More

Network ID	VTAM Domain	Resource Name	Resource Type	Desired Status	Actual Status	Last VTAM Status	Major Node
NET001	SYDVTM01	AAUTCNMI	APPL	ACTIVE	ACTIVE	CONCT	SD1APNV1
NET001	SYDVTM01	ALIASAPL	APPL	ACTIVE	ACTIVE	CONCT	SD1APNV1
NET001	SYDVTM01	AUGFV2MV	APPL	ACTIVE	ACTIVE	ACTIV	SD1APPC1
NET001	SYDVTM01	BNJHWMON	APPL	ACTIVE	ACTIVE	CONCT	SD1APNV1
NET001	SYDVTM01	CMNM1	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM1CNM	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM1NTS	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM1PPO	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM2	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM2CNM	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM2NTS	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM2PPO	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM3	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM3CNM	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM3NTS	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2
NET001	SYDVTM01	CMNM3PPO	APPL	ACTIVE	ACTIVE	CONCT	SD1APNM2

F1=Help F2=Split F3=Exit F5=Find F6=RefDelay
 F7=Backward F8=Forward F9=Swap F11=Right

The panel contains additional information about the resources to the right. Use the F11 (Right) and F10 (Left) function keys to scroll the display horizontally.

If display refresh is interfering with your tasks, use the F6 (RefDelay) function key to change the behavior of the display refresh action. If resources are disappearing from your display because of status changes, use the SS action code to create a static list. See the online help for more information.

Identifying the Reason for a Particular Resource Status

The information displayed on the Network Resources panel contains the reason why an SNA resource is in a particular state. You can display the reason by pressing F11 (Right) or by entering B beside the resource to browse its record.

The following example shows the Reason column being displayed. The example indicates that the SOLV11 SNA resource has been reactivated since it was discovered.

SOLVPROD----- NetMaster Automation : Network Resources -----				RefDelay=5
Command ==>				Scroll ==> CSR
	S/B=Browse	A=Activate	D=Display	T=Terminate
	SS=Static List	?=More		
Resource Name	Last Updated Date	Time	Reason	
SOLV1	14-MAY-1996	08.04.13	NETWORK DISCOVERY	
SOLV1CNM	14-MAY-1996	08.04.14	NETWORK DISCOVERY	
SOLV1NTS	12-MAY-1996	17.22.16	NETWORK DISCOVERY	
SOLV1PPO	12-MAY-1996	17.22.17	NETWORK DISCOVERY	
SOLV1SSI	12-MAY-1996	17.22.18	NETWORK DISCOVERY	
SOLV10	12-MAY-1996	17.22.19	NETWORK DISCOVERY	
SOLV10CN	12-MAY-1996	17.22.19	NETWORK DISCOVERY	
SOLV11	17-MAY-1996	10.16.14	INTERNAL OVERRIDE (ACTIVE IST093I SOLV11 A	
SOLV11CN	12-MAY-1996	17.22.21	NETWORK DISCOVERY	
SOLV12	17-MAY-1996	09.24.16	NETWORK DISCOVERY	
SOLV12CN	12-MAY-1996	17.22.22	NETWORK DISCOVERY	
SOLV13	15-MAY-1996	08.53.49	NETWORK DISCOVERY	
SOLV13CN	12-MAY-1996	17.22.24	NETWORK DISCOVERY	
SOLV14	12-MAY-1996	17.22.25	NETWORK DISCOVERY	
SOLV14CN	12-MAY-1996	17.22.26	NETWORK DISCOVERY	
SOLV15	12-MAY-1996	17.22.26	NETWORK DISCOVERY	
F1=Help	F2=Split	F3=Exit	F5=Find	F6=RefDelay
F7=Backward	F8=Forward	F9=Swap	F10=Left	F11=Right

If an SNA resource has an unsatisfactory status, check the Reason column to obtain an initial hint of what might have happened.

Special Display Characters

An asterisk (*) indicates that the SNA resource has a particular status because its parent is inactive.

A plus sign (+) indicates that the SNA resource is in recovery.

Sorting Monitored Resources

To sort the monitored resources by a specific field, enter **SORT** at the Command ==> prompt. A message is displayed listing the fields by which you can sort the resources. You can sort the resources by up to four fields. The following command sorts the resources by network ID, then by parent name, then by user tag 1, and lastly by user tag 3.

```
SORT NETID,PRNAME,USRTAG1,USRTAG3
```

Entering Commands to Assist With Problem Determination

Once you have a list of network resources, commands can be entered beside each resource to assist with problem determination. Some of these commands are applicable only if you have the appropriate applications on your system. To list the commands, enter ? beside a resource.

You can use some commands on multiple resources at the same time. For example, you can use the RL command to display a list of more than one resource. To do this, enter the command at the Command ==> prompt. A command validation panel is displayed for you to specify the command parameters.

Working with NetSpy SNA Agents

The NetSpy SNA agent is part of the Unicenter NetSpy Network Performance product. The agent collects SNA performance data that can be monitored in your product region. The region can link to multiple agents on the same system.

To link the region to an agent, customize the NETSPYLINKS parameter group. For information about the group, see help. To check the status of the specified links, enter the /NASCON shortcut.

After the links are established, you can perform the following:

- Define NetSpy user alert monitors for a monitored SNA resource. The status of the resource will react to any received alerts.
- Enter a command beside a monitored SNA resource to retrieve any performance data collected for that resource by a linked agent.
- Monitor the NetSpy alerts by using the alert monitor. To access the monitor, enter the /ALERTS shortcut.

Defining NetSpy User Alert Monitors

To monitor the performance of an SNA resource against specified thresholds, you can define NetSpy user alert monitors for the resource. These monitors are not stored and are lost when you restart your region.

Note: You cannot define monitors for the following types of resources: CDRM, CDRSC, and MAJNODE.

To define a monitor for a resource, proceed as follows:

1. On the Network Resources panel, enter **YMM** beside the resource.
2. On the displayed NetSpy Monitors List panel, press F4 (Add).
3. By using the displayed NetSpy Monitor Definition panel, define the monitor. You must provide a title for the monitor and specify the relational expressions for the performance threshold requirements. For information about the panel and its fields, press F1 (Help).
4. To save and activate the definition, press F3 (File).

Maintaining NetSpy User Alert Monitors

On the NetSpy Monitors List panel, you can perform various actions on the monitors. The D (Delete) and U (Update) actions have special behavior. For more information about the actions, press F1 (Help).

Using Filters to Display Selected Resources

The SNA resource filter is a Boolean expression that determines which SNA resources are retrieved for display on the Network Resources panel.

From the Network Summary panel, you can access the SNA resource filter list in one of the following ways:

- Type ? at the Command ==> prompt, then press F5 (Filter).
- Enter **FILTER ?** at the Command ==> prompt.

A sample list follows:

```
SOLVPROD----- NetMaster Automation : SNA Resource Filter List -----
Command ==>                                         Scroll ==> PAGE

Filter Name      Description
SNAPU            SNA PU resources
SNALINES         SNA lines
**END**
```

S/=Select B=Browse U=Update C=Copy D=Delete

The SNA Resource Filter List panel displays the available filters. Entering **S** (Select) beside the chosen filter displays the list of resources that pass through that filter. The resources are sorted by their name. An example follows:

```
SOLVPROD---- NetMaster Automation : Network Resources (SNALINES) --- RefDelay=5
Command ==>                                         Scroll ==> PAGE

S/B=Browse A=Activate D=Display T=Terminate SS=Static List ?=More
Network  VTAM   Resource  Resource  Desired  Actual  Last VTAM  Major
ID       Domain Name      Type      Status   Status  Status   Node
NET001   SYDVTM01 ASYDC     LINE      INACTIVE INACTIVE IINOP     NCP01C
NET001   SYDVTM01 ASYD1     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ASYD2     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ASYD3     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ASYD4     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ASYD5     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ASYD6     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ASYD7     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ASYD8     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ATR01     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ATR02     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ATR1A     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ATR11     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ATR12     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ATR13     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C
NET001   SYDVTM01 ATR14     LINE      ACTIVE   ACTIVE   ACTIV     NCP01C

F1=Help      F2=Split    F3=Exit      F5=Find      F6=RefDelay
F7=Backward  F8=Forward  F9=Swap      F11=Right
```

The selected filter determines the resources you see. To perform further filtering, enter **FILTER ?** at the Command ==> prompt to display the SNA Resource Filter List panel.

It is also possible to define temporary filters. For more information on defining filters, see the chapter [“Defining and Maintaining SNA Resource Filters.”](#)

Selecting Resources by Creating a Temporary Filter

You can use a temporary SNA resource filter to help you handle special filtering requirements that are not provided by the defined filters. A temporary filter is not stored in the knowledge base automatically and is lost after you finish using it.

Create a temporary filter to select SNA resources as follows:

1. From the Network Summary panel, press F5 (Filter) to access the SNA Resource Filter definition panel.
2. Specify the Boolean filter expression.
3. Press F6 (Action) to display the selected resources.

When you press F3 (Exit) and return to the definition panel, you can do one of the following:

- If you have finished with filtering, press F12 (Cancel).
- If you want to display a different group of resources, repeat steps 2 and 3.
- If you want to save the filter, press F3 (File) to display the Filter Definition window. Specify the name and description of the filter, and press F3 (File) again to save the filter.

You can select the VTAM domains to be monitored on your SNA resource network summary display. Press F11 (Domains) to access the VTAM Domain Consolidation panel.

```

SOLVPROD---- NetMaster Automation : VTAM Domain Consolidation Profile ---NET001
Command ==>

S/I=Include X=Exclude

Net ID      Name      Linked
            SYDVTM01  Region's
            SOLV17    ACB Name
NET001      SYDVTM02  SOLV7
NET001      SOLV7    Link
            ACTIVE   Status
**END**          *** SELECTED FOR INCLUSION ***

F1=Help      F2=Split    F3=OK        F6=Refresh
F7=Backward  F8=Forward   F9=Swap      F10=All      F12=Cancel

```

To include a domain, enter **I** beside the required domain. To exclude a domain, enter **X** beside the required domain. If you want to include all domains, press F10 (All). Press F3 (OK) to confirm your selections.

Managing Individual SNA Resources 4-9

Changing the Operations Methods of an SNA Resource

The operations methods of an SNA resource is contained in the associated SNA model. By default, resources are associated with the supplied models.

You can change the operations methods of SNA resources by modifying the associated models. However, if you modify a model, the behavior of all resources associated with that model is changed. If you want to change the behavior of a single resource only, associate it with a different model. See the next section, [Things to Consider When Defining SNA Resource Models](#), for information about how to define models.

Change the model association for a resource as follows:

1. From the Network Resources panel, enter **S** beside the required resource to access its record.
2. Press F4 (Edit) to change the panel to a data-entry panel.
3. Specify the model that contains the required operations methods in the Model Name field.
4. Press F3 (File) to update the record. The behavior of the resource now follows the methods in the new model.

Important! Changes to the SNA resource record are retained only across warm starts of the SNA resource discovery process. If you want the changes to be permanent, program the requirements in the \$RSUSRAX SNA resource discovery exit. See the Implementation Guide.

Things to Consider When Defining SNA Resource Models

An SNA resource model, although a template, has its own special characteristics. The definition of an SNA resource model is similar to a resource template definition but without the following information:

- Availability map
- Log details
- Owner details
- Extended function exit

The missing information, however, can be specified in the SNA group definition for SNA resources belonging to that group.

See the *Automation Services Common User Guide* for detailed information about how to define templates.

Activation Method Considerations

To minimize processing overhead, you should not use activation processes in SNA resource models. The supplied models actually prevent you from adding activation processes.

Recovery Method Considerations

The Recovery Details panel enables you to:

- Limit the number of activations that can be retried within a specified period (restart control)
- Specify the actions to take if the limit is exceeded

To use the specified recovery method, enter **YES** in the Perform Recovery field on the Activation Details panel. The Perform Recovery and the Assume Status fields are mutually exclusive.

Restart Control

The restart control for SNA resources is similar to the standard restart control for resources that can be managed by the region. See the *Automation Services Common User Guide* for information about the standard restart control.

However, the behavior of the retry time period is different. The standard retry time period starts when a resource is first activated. For an SNA resource, the retry time period starts some time after first activation as follows:

- If activation is not successful, the retry period starts when the activation timeout period expires.
- If activation is successful, the retry period starts as soon as the resource becomes active and is used to monitor the resource state for the duration of that period.

Display Method Considerations

Status monitoring of the managed SNA resources is performed in the SNA network model and does not use the display methods specified in the SNA resource models. The method specified in a resource model is used only when you issue the D command to display the status of an SNA resource.

Heartbeat Monitoring for APPL Resources

When an APPL type SNA resource comes out of the ACTIVE, STARTING, or STOPPING actual state, sometimes no messages are generated to indicate the state change.

In the SNA resource model, you can activate heartbeat monitoring. Then when the model is associated with an APPL resource and that resource is in the ACTIVE, STARTING, or STOPPING state, polling takes place for that resource at regular intervals until a state change is detected.

You can change the polling interval by updating the AUTOSNACNTL region customization parameter group.

Heartbeat Monitoring for Switched PU Resources

When an attempt is made to connect to a switched PU type SNA resource, as indicated by the IST590I message, the resource is considered to be in the STARTING state. No messages are generated to indicate the actual activation of the resource, which might take some time to complete. Heartbeat monitoring enables the actual state change to be detected.

You can activate heartbeat monitoring in the SNA resource model. Then when the model is associated with a switched PU resource and a connection is made to that resource, polling takes place for that resource at regular intervals until a state change is detected or until the polling limit expires.

You can change the polling interval and limit by updating the AUTOSNACNTL region customization parameter group.

Message Rule Considerations

An SNA resource model definition does not provide extended message filtering and extended display attribute functions.

You cannot use the \$AA-, \$DN-, and \$MN- special message prefixes in a model definition.

Considerations in Using Variables

You can use the &ZRS-prefixed variables to pass values to processes. However, in command strings and message text, you can only use the &ZRMDDBNAME variable. You can also use the < and > characters for left-justified and right-justified fixed-length name fields in message text.

Testing

After you define a model, you can test it by using the event simulator. You can generate a simulated message for a particular SNA resource that is associated with the model and check the returned results. You simulate events from the Simulation Events List panel. To access the list, enter the /EADMIN.E path.

See the *Automation Services Common User Guide* for detailed information about how to simulate events.

Considerations

You define the message you want to simulate on the Simulate Message panel. To test SNA resources and the associated SNA resource models, you should specify:

- In the Jobname field, the name of the SNA resource.
- In the Route Codes field, 17 and 18, and optionally 19. Routing code 19 indicates that the message is the response to an operator command.

An example follows:

```

SOLVPROD----- Automation Services : Simulate Message -----
Command ==>                                         Function=Add

. Message Attributes -----
|
| Message Text .....+ IST105I ASYD11 NODE NOW INACTIVE_____
|
| Jobname ..... ASYD11_____
| Jobtype ..... JOB (Specify JOB, STC or TSU)
| Msg Type ..... WTO (Specify WTO or WTOR)
| Route Codes ..... 17,18_____
| Descriptor Codes .. 5_____
|
| Note: If Message Attributes change then the current results are cleared.
|-----
. Simulation Control -----
|
| EventView Rulesets ..... HITS_ (HITS, MISSES, BOTH or NONE)
| Resources ..... HITS_
| Consolidated Console Profiles ... HITS_ '' '' '' ''
|-----
F1=Help      F2=Split      F3=File      F4=Save      F5=View      F6=Simulate
                                   F9=Swap      F12=Cancel

```

Making the Identification of an SNA Resource Easier

You can use up to five SNA resource tags to provide a more meaningful description for an SNA resource.

Normally, the tags are already defined during the startup of the region by the \$RSUSRAX SNA resource discovery exit. However, you can update the tags as follows:

1. From the Network Resources panel, enter **S** beside the required resource to access its record.
2. Press F4 (Edit) to change the panel to a data-entry panel.
3. Specify the text strings you want to use to identify the resource in the User Tag1 through User Tag5 fields.
4. Press F3 (File) to update the record.

Important! Changes to the SNA resource record are retained only across warm starts of the SNA resource discovery process. If you want the changes to be permanent, program the requirements in the \$RSUSRAX SNA resource discovery exit. See the Implementation Guide.

Maintaining the SNA Network Model

The maintenance functions for the SNA network model enable you to do the following:

- If you cannot find an SNA resource you want to manage in the SNA resource list, you can create a record for it in the network model.
- If an SNA resource has become redundant, you can delete its record from the network model.
- You can maintain the SNA model association and the user-defined tags for an SNA resource.

To access the maintenance functions, enter the **/SNADMIN.R** path.

Important! Changes to the SNA network model are retained only across warm starts of the SNA resource discovery process. If you want the changes to be permanent, program the requirements in the \$RSUSRAX SNA resource discovery exit. See the Implementation Guide.

Discovering SNA Resources

The region automatically discovers the SNA resources on the system at region startup. However, you can rediscover the resources at any other time as follows:

1. Enter the **/ICS** shortcut to list the parameter groups.
2. Display the AUTOSNACNTL parameter group, and, if required, updated the discovery criteria.

For information about these criteria, see the online help and the *Implementation Guide*.

3. Press F6 (Action) to rediscover the resources.

Responding to the Network Discovery Status Panel

If the initial discovery of the SNA resources is in progress while you are using the SNA network summary display, your monitor session ends and the Network Discovery Status panel is displayed. Similarly, if you attempt to access the summary display while discovery is in progress, the Network Discovery Status panel is displayed. You can take one of the following actions:

- Press F6 (Action) to monitor the discovery process.
- Press ENTER to refresh the information in the status window.
- Press F3 (Exit) to exit the panel.

You can return to the summary display when the discovery process completes.

Defining and Maintaining SNA Resource Filters

From the SNA network summary display, an operator can zoom to the Network Resources panel that displays the list of SNA resources. The operator can use an SNA resource filter to select what is contained in that list.

What Is an SNA Resource Filter?

An SNA resource filter is a Boolean expression that determines which SNA resources are retrieved for display on the Network Resources panel.

An SNA resource filter enables you to select resources that:

- Satisfy the specified name and type criteria
- Are downstream to a specified resource
- Have a certain status
- Satisfy the specified user-defined resource tag criterion
- Are associated with the specified SNA resource model

Implementing the SNA Resource Filters

You can predefine a set of filters. Operators can also define temporary filters when the need arises.

After you define a filter, that filter can be used to select what information is retrieved for display on the Network Resources panel. For example, you can define a filter that, when used, causes only information about those resources belonging to a particular branch of your organization to be retrieved.

When you save a filter definition in the knowledge base, the definition propagates automatically to all the connected regions. That is, the definition is global.

Accessing SNA Resource Filter Definitions

To access the list of SNA resource filter definitions, enter the **/SNADMIN.RF** path. The SNA Resource Filter List panel is displayed. An example follows:

```
SOLVPROD----- NetMaster Automation : SNA Resource Filter List -----
Command ==>                                     Scroll ==> PAGE

Filter Name  Description                               S/B=Browse U=Update C=Copy D=Delete
DUBBO        SNA resources belonging to the Dubbo branch
SYDNEY       SNA resources belonging to the Sydney branch
**END**
```

The panel displays the list of SNA resource filters defined in the knowledge base.

Actions That You Can Perform on an SNA Resource Filter Definition

You can perform the following actions from the SNA Resource Filter List panel:

F4 (Add)	Displays the SNA Resource Filter panel for you to define a new SNA resource filter.
S, /, or B (Browse)	Displays the SNA Resource Filter panel in the BROWSE (read-only) mode. If you are authorized to update the definitions, you can press F4 (Edit) to switch to the UPDATE mode.
U (Update)	Displays the SNA Resource Filter panel in the UPDATE mode.
C (Copy)	Displays the SNA Resource Filter panel in the COPY mode. You must change the filter name.
D (Delete)	Displays a deletion confirmation message. Press ENTER to delete the definition. Press F12 (Cancel) to retain the definition.

Defining an SNA Resource Filter

Add an SNA resource filter as follows:

1. Access the SNA Resource Filter List panel.
2. Press F4 (Add) to add a filter. The SNA Resource Filter panel is displayed.

Note: You can press F12 (Cancel) to cancel the operation any time before Step 5.

3. Complete the Name and Description fields in the Filter Definition window to identify the new filter. See the online help for a description of the fields.
4. Specify a Boolean expression in the Filter Expression window to define the filter. For information about how to construct the Boolean expression, see [Defining the SNA Resource Filter Expression](#) in this chapter.
5. Press F3 (File) to file the new definition when you finish defining the filter.

Using the SNA Resource Filter Panel

The SNA Resource Filter panel specifies the details of an SNA resource filter. An example of the panel is shown. The operation you are performing is displayed at the top right corner of the panel (for example, Function=BROWSE).

```

SOLVPROD----- NetMaster Automation : SNA Resource Filter ---Function=BROWSE
Command ==> Scroll ==> PAGE

. Filter Definition -----
| Name ..... SNALINES
| Description .. SNA lines
| Last Updated at 10.49.41 on MON 24-JUL-1995 by USER01
|-----
. Filter Expression -----
|
|      "(" Field  Opr Value                               Gen ")" Bool
|      RSTYPE  =  "LINE"
|      **END**
|
|-----

F1=Help    F2=Split  F3=Exit   F4=Edit   F5=Find
F7=Backward F8=Forward F9=Swap   F12=Max

```

The panel displays two windows. The Filter Definition window identifies the filter by name and description, and the Filter Expression window specifies the Boolean expression that defines the filter.

Defining the SNA Resource Filter Expression

Use the Filter Expression window on the SNA Resource Filter panel (see the SNA Resource Filter panel illustrated above) to specify the Boolean expression that defines the filter. The expression uses SNA resource attributes as criteria to determine which SNA resources are selected.

Use the D (Delete), I (Insert), and R (Repeat) action codes to help you enter the expression:

Delete	Deletes the selected line.
Insert	Inserts a blank line after the selected line.
Repeat	Repeats a selected line.

Example: Selecting SNA Resources by Type

The SNA Resource Filter panel in [Using the SNA Resource Filter Panel](#) in this chapter shows an example that defines an SNA resource filter called SNALINES. The filter enables you to monitor SNA lines.

Example: Selecting Switched Major Nodes

The following example shows a filter that selects all switched major nodes.

```
. Filter Expression -----
|
|      "(" Field  Opr Value                               Gen ")" Bool
|      NETID   EQ  "NET001"                               AND
|      PRNAME  EQ  "ASYD22"                               AND
|      RSTYPE  EQ  "LU"
|      **END**
```

Example: Selecting SNA Resources That Are Downstream to a Specified SNA Resource

The following example shows a filter that selects all LUs downstream to the ASYD22 SNA resource in the NET001 network.

```
. Filter Expression -----
|
|      "(" Field  Opr Value                               Gen ")" Bool
|      MAJNODE EQ  "SWSNA"
|      **END**
```


Maintaining SNA Resource Filter Definitions

You can browse, update, copy, and delete SNA resource filter definitions from the SNA Resource Filter List panel.

Managing SNA Resources from a Service Perspective

Basic SNA resource management does not give you a business view of the services you are providing. To carry network management further, you need to group resources into the services they provide.

This chapter describes the functions that enable you to implement service-based views of your network operations and how you can use those functions.

Using Services to Manage Resources

When you first start up your region, the operators can immediately monitor the SNA resources by using the SNA network summary display. By using the supplied default SNA resource models, the region also maintains the desired state of the resources. This desired state is determined by the initial status of a resource in the VTAM domain.

However, you need to define those resources to the knowledge base if you want to provide the following:

- More detailed management of the desired state of the resources
- Management of non-SNA resources
- A service-driven operations perspective of your networks

Managing the Desired State of Resources

Instead of using the initial status of SNA resources in the VTAM domain as the desired state, you might want to manage their desired state in more detail. For example, you might want a resource to be active over certain periods of time and to be inactive over other periods of time. You might also want to include the resource in a service.

If you want to do the above, you must define the affected resources to the knowledge base. You define the resources by first defining a system image and then by defining the resources to that image.

You define SNA resources in **SNA groups**, each of which can contain one or more resources. You specify the availability requirements of those groups, and the contained resources inherit that availability.

If you want to include the management of non-SNA resources as part of network operations, you can define them as USRCLS class resources.

See the chapter “[Grouping SNA Resources](#)” for information about how to define an SNA group. See the *Automation Services Common User Guide* for information about how to define USRCLS class resources.

Providing a Service-driven Operations Perspective of Your Networks

An SNA group enables you to group SNA resources in the local VTAM domain. Where your business function uses resources from multiple VTAM domains, you can include the required SNA groups in the different domains within a single service.

A typical service will include different classes of resources. It might require SNA resources, but it might also require other classes of resources such as system resources, CICS resources, or IMS resources. You can define these other classes of resources by using the other products supported by Automation Services.

To put your network operations in a service-driven perspective, you group related SNA groups and resources in services. You specify the availability requirements of those services. The services in turn ensure the availability of its members.

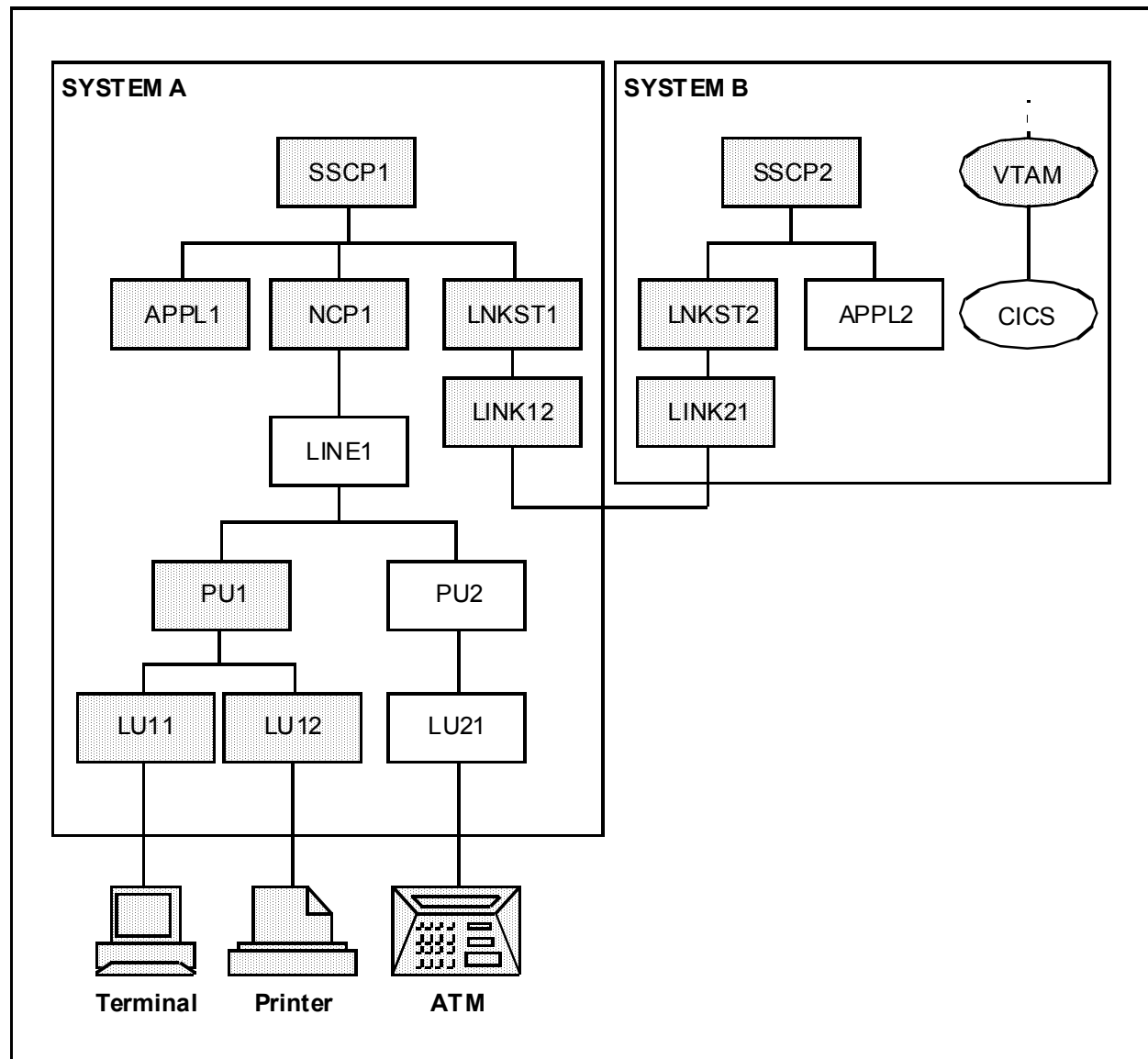
Defined services can be monitored. You can tell whether a service is healthy at a glance. If an operational problem occurs, you can display the status of the resources to determine which resources are causing the problem.

See the *Automation Services Common User Guide* for information about how to define a service.

Note: You can define and manage services from focal point regions only. Services are not visible in subordinate regions, but you can include resources managed by a subordinate region in a service.

Example

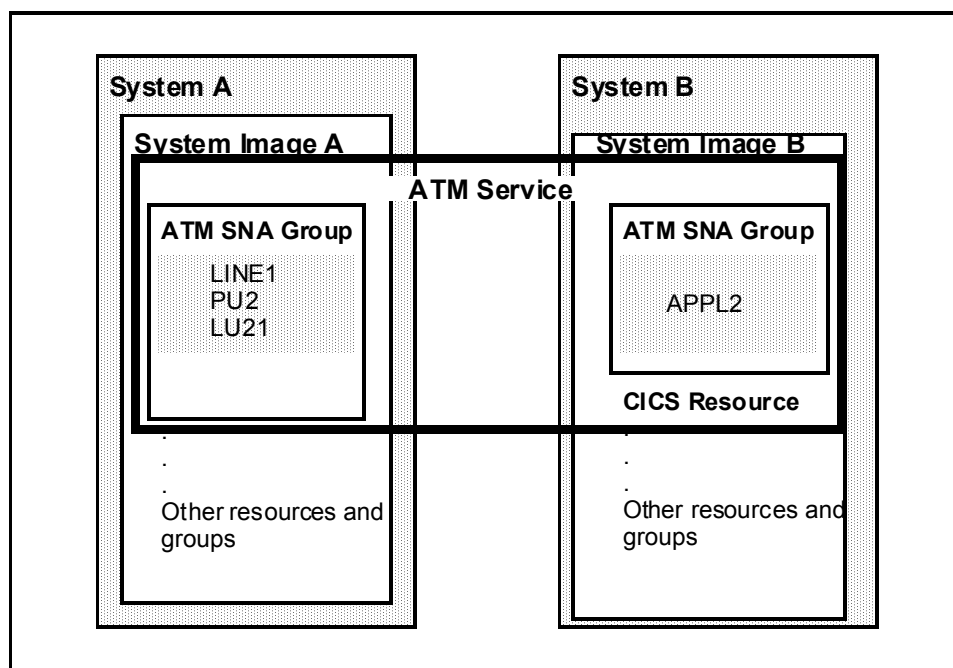
The following diagram shows a simplistic example of an SNA network. In the network, the CICS application associated with the APPL2 node and the automatic teller machine (ATM) provide a branch service. You want to monitor the health of this service without having to monitor the individual resources that make up that service. To provide this function, you need to define a ServiceView service. To define this service, you need both the Unicenter SOLVE:Operations Automation product and this product.



Using this example, a typical service definition task might proceed as follows:

1. You decided that the service should include the following resources:
 - LINE1, PU2, and LU21 on System A
 - APPL2 and CICS on System B
2. To include the identified resources in a service, you need to add them to the appropriate system images. Create the image definitions for the two systems if the images are not already defined.
3. Define the identified resources to the images. In image A, define an SNA group that includes the LINE1, PU2, and LU21 resources. In image B, define an SNA group that includes the APPL2 resource and a definition for the CICS started task.
4. Define a service to include both SNA groups and the CICS resource definition. After you define the service, you have immediate visibility of that service on the status monitor.

The following diagram shows an example of the defined service.



Implementing the SNA Operations Environment

To provide a service-driven operations perspective of your networks, you need to implement the automation component of this product. You group resources into the services they provide by creating SNA group and service definitions. You might also want to manage messages by creating EventView rules.

After you have reviewed and decided on your operations requirements, you can start implementing those requirements into your SNA operations environment. The implementation consists of defining your automation requirements and monitor views.

If you are planning a multisystem environment, you should create the definitions in a master region. When you connect two regions, you also synchronize their knowledge bases. The knowledge base in the source region overwrites the knowledge base in the target region (which is the region from which you attempt the connection). **Use the master region as the source.** Do not independently create definitions in regions that will later be connected.

Defining Automation Requirements

To define your automation requirements, you create the system image, services, and EventView rules. See the *Automation Services Common User Guide* for detailed information about the implementation steps. The main steps are as follows:

1. Create the system image and the SNA group definitions.
2. Load the system image in the region.
3. If you are managing more than one system by using multiple regions, link the regions, then repeat steps 1 and 2 in those regions.
4. If you want to manage the messages on a system, create an EventView rule set and associate it with the system image.
5. Create services to provide a business view of the managed resources.

Defining Monitor Views

You can customize your monitors to provide you with different views of the managed systems. You can create:

- Filters for the status monitor. You can define a filter from the Status Monitor Filter List panel. Enter the **/ASADMIN.F** path to access the list.
- Icon panels for the graphical monitor. To use the graphical monitor, you **must** create at least one icon panel. You can generate an icon panel from the Icon Panel Definition List panel. Enter the **/GADMIN.P** path to access the list.
- Message profiles for the consolidated console. To use the consolidated console, you **must** create at least one message profile. You can define a message profile from the Message Profiles panel. Enter the **/EADMIN.C.M** path to access the profile list.

See the *Automation Services Common User Guide* for detailed information about how you can define the monitor views.

Grouping SNA Resources

After you defined a system image, you can add SNA groups in it. You define these resources as ResourceView definitions in the knowledge base.

When Do You Need to Define SNA Groups?

The region can perform basic initial status management of SNA resources in the VTAM domain. However, if you want to do the following, you need to include those resources in SNA groups:

- To provide more detailed management of the desired state of the resources by scheduling resource availability
- To provide a service-driven operations perspective of your networks

The SNA groups belong to system images. To create SNA groups, you should have defined at least one image. See the *Automation Services Common User Guide* for information about how to define images.

What Is an SNA Group?

An SNA group is an encapsulation of one or more SNA resources that you want the region to manage. You can define multiple groups in a system image, each group representing a number of related SNA resources.

The defined group is a ResourceView definition belonging to the SNAGRP class, and you can include it in parent-child relationships with other definitions. You can include it in a service to provide a service-driven operations perspective of your SNA networks.

While monitoring a group, operators can zoom to the contained resources and issue commands to act on them.

What You Can Define for an SNA Group

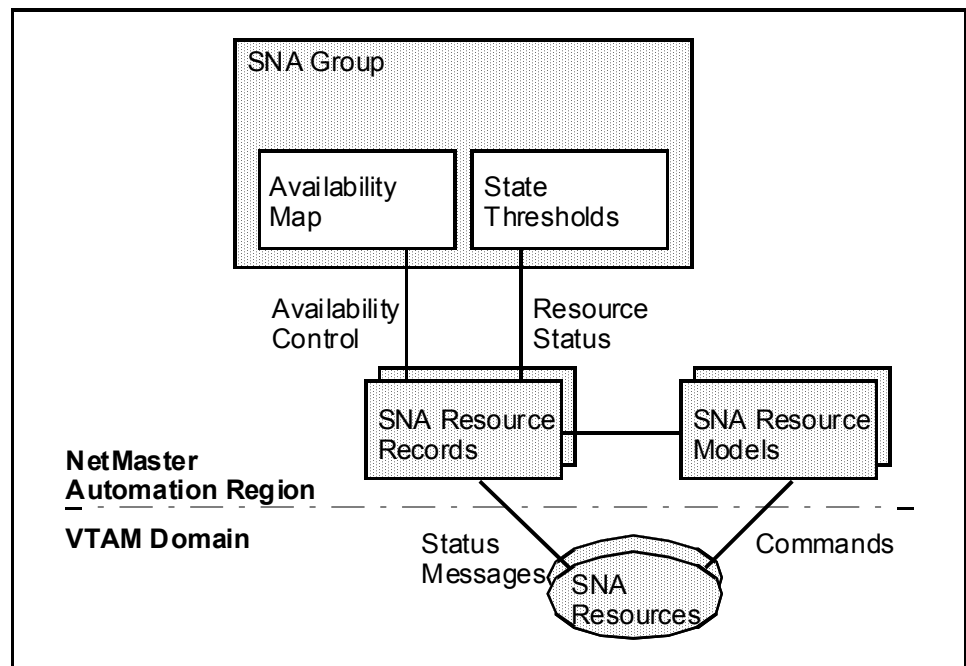
You can define the following information for an SNA group:

- Name, operation mode, and description
- Availability map
- SNA resources that are members of the group and the importance of a member to the group
- State thresholds to indicate how the status of the members affect the actual state and, optionally, logical state of the group
- Exits to invoke before the activation of the group or when the resource goes through specified state changes
- Logging requirements
- Up to two people who can be contacted if the group has operational problems
- Extended function exit to extend the functions that can be performed on the group in the region

How the Region Maintains the Desired State of an SNA Group

The SNA group definition does not contain any operations methods. Instead, these methods are contained in a set of supplied SNA resource models. Each model defines the methods for a particular type of SNA resource (for example, logical units or physical units). The methods are thus generic for an SNA resource type. You can, however, modify these methods (see [Changing the Operations Methods of an SNA Resource](#) in the chapter “Managing Individual SNA Resources”).

The following diagram shows the relationship between group, resources, and models.



When the actual state of a group member deviates from the desired state, the automation engine executes the appropriate operations method to attempt to return the member to the desired state.

Activation of an SNA Group

Activating an SNA group activates all its members.

Inactivation of an SNA Group

Inactivating an SNA group inactivates only those members that are not required to be active by other defined resources.

Accessing SNA Group Definitions

You can create or update SNA group definitions from the SNA Group List panel. Access the list from any panel as follows:

1. Enter the **/RADMIN.R** path.
2. On the Resource Definition panel, identify the system image.
3. Enter **S** beside the SNAGRP class to display the SNA group list.

Actions That You Can Perform on an SNA Group Definition

You can perform the following actions from the SNA Group List window:

F4 (Add)	Displays the General Description panel for you to define a new SNA group.
S, /, or B (Browse)	Displays the Panel Display List window that lists the definition panels. When you select a panel, the panel displays the information in the BROWSE (read-only) mode. If you are authorized to update the definitions, you can press F4 (Edit) from a definition panel to switch to the UPDATE mode.
U (Update)	Displays the Panel Display List window that lists the definition panels. When you select a panel, the panel displays the information in the UPDATE mode.
C (Copy)	Displays the General Description panel in the COPY mode. You must change at least the system image name, system image version, or group name. If you copy the definition to another image, any availability map and processes specified in the definition are also copied if they do not exist already in that image. (Global processes are already visible to the image and are not copied to that image.) If you copy the definition to another image and a definition of the same name already exists, you are prompted to either replace the existing definition or cancel the operation. Replacing the definition does not remove any existing parent-child relationships.
D (Delete)	Displays a deletion confirmation message. Press ENTER to delete the definition. Press F12 (Cancel) to retain the definition.
R (Related)	Displays the list of immediate parents and children of the definition and enables you to update those relationships.
RG (Icon Resource Group)	Enables you to create a resource group so that the SNA group can be attached to an icon for display on the graphical monitor.

Defining an SNA Group

To add an SNA group, press F4 (Add) from the SNA Group List panel. An SNA Group General Description panel is displayed. You define the group by entering data on the following panels:

- SNA Group General Description (must be completed)
- Availability Map
- SNA Group Filters (should be completed)
- State Thresholds (should be completed)
- State Change Exits
- Automation Log Details
- Owner Details
- Extended Function Exit

Describing the SNA Group

Use the SNA Group General Description panel to specify the name, the operation mode, and the description of the group.

Identifying the SNA Group

Use a meaningful name to identify the SNA group (for example, DUBBOBRANCH). A meaningful name helps you identify the groups when you monitor the groups from the status monitor.

The name must contain alphanumeric, @, #, and \$ characters only, but must not start with a digit. The name can be up to 12 characters long.

Using the SNA Group Type Field

You can categorize the SNA groups by type. The SNA Group Type field defines a pseudo class name that is displayed on the status monitor instead of the actual SNA group class name. The default is SNAGROUP.

Specifying the Operation Mode

Specify an operation mode of AUTOMATED, IGNORED, MANUAL, or OFF in the Operation Mode field. During operation, the specified mode can be restricted by the global operation mode. See the *Automation Services Common User Guide* for information about the global operation mode.

Defining the Availability of the SNA Group

From the SNA Group General Description panel, press F8 (Forward) to scroll forward to the Availability Map panel. Use this panel to define the changes to the normal availability of the SNA group.

Leave the Map Name field blank if you want to use the default desired state, which can be either ACTIVE or INACTIVE (as set in the AUTOIDS parameter group during region initialization).

Note: You can create a new map from the group definition. You can either name a new map and define it, or access an existing map, change the name, and update the copy. The map is created in the knowledge base when you save the definition.

See the *Automation Services Common User Guide* for information about how to define availability maps.

Selecting SNA Group Members

From the Availability Map panel, press F8 (Forward) to scroll forward to the SNA Group Filters panel. Use this panel to define the criteria that select the members of the SNA group.

Use the Resource Name, the Resource Type, and the Filter Name fields in any combination to define the selection criteria. You can specify up to 97 independent lines of criteria. For each line, you also specify a weighting to indicate how important the selected resources are to the group.

Specifying the SNA Resource Name Criterion

Specify the SNA resource name selection criterion in the Resource Name field. The following two types of generic indicators are available for you to use in the criterion:

- Wildcard characters
- Downstream and upstream indicators

You cannot mix the two types of indicators.

Wildcard Characters

The wildcard characters that you can use in the Resource Name field are as follows:

- The underline character (_) represents a single character. For example, SOLV_D matches SOLV1D, SOLV2D, ...
- The percent character (%) represents zero or more characters. For example, SOLV%D matches SOLVD, SOLV1D, SOLV11D, ...

The asterisk (*) is also a valid wildcard character. It behaves the same way as the _ character when embedded and as the % character at other positions. For example, * and SOLV* are valid values.

Downstream and Upstream Indicators

Downstream and upstream indicators denote whether resources below and above a named resource are to be selected as members. The indicators are as follows:

Indicator	Description
>	Selects the next level of downstream resources only.
>>	Selects all downstream resources.
<	Selects the next level of upstream resources only.
<<	Selects all upstream resources.

The following criteria are valid examples: <PU1, <PU1>, and <<PU1>.

Important! When you monitor an SNA group, the group discovers all its members and monitors them. If you are using a >> downstream indicator and a resource becomes available downstream at a later time, the group will not discover it and the resource will not affect the status of the group. To restore such a resource, you can use the BLD or BLDALL command.

Specifying the SNA Resource Type Criterion

Specify the SNA resource type selection criterion in the Resource Type field. The default value is an asterisk (*), indicating all types.

If you use a downstream or an upstream indicator in the Resource Name field, you can only use the default value in the Resource Type field. You can, however, use a filter to set the type criterion.

Specifying an SNA Group Filter

You can use a predefined SNA group filter to incorporate more advanced selection criteria. Name the filter in the Filter Name field.

You can use the U (Update Filter) action code to modify a specified filter. You can use the L (List Filters) action code to access the list of defined filters. From the list panel, you can create new filters. The filters use Boolean operators to specify the selection criteria.

An SNA group filter enables you to select resources that:

- Satisfy the specified name and type criteria
- Are downstream to specified resources
- Satisfy the specified user-defined resource tag criteria

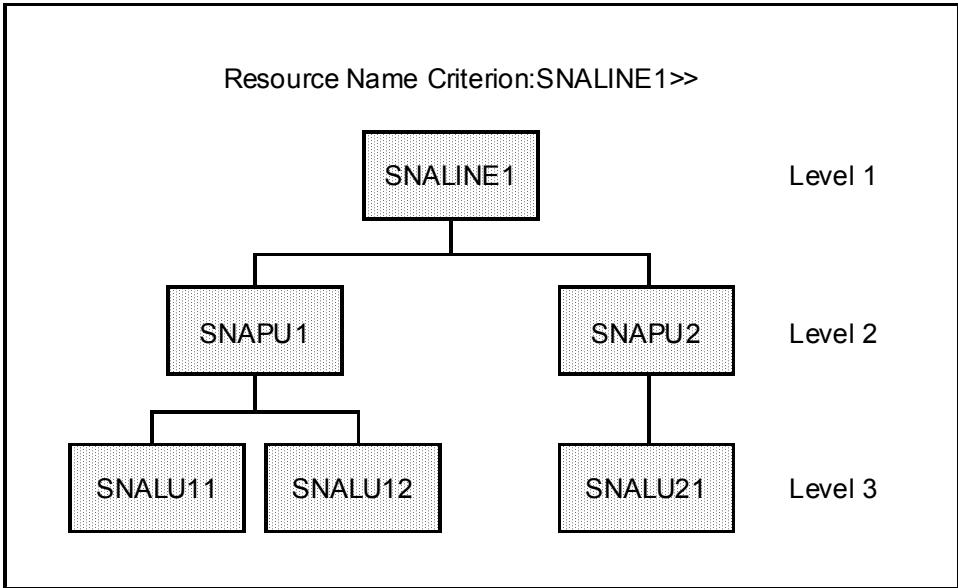
SNA group filters are similar to the SNA resource filters that you use to customize your view of SNA resources. See the chapter “[Defining and Maintaining SNA Resource Filters](#)” for information about how to define filters.

Filter Processing

Normally, a filter applies to all SNA resources selected by the criteria in the Resource Name and Resource Type fields. However, if a >> downstream indicator is used, filtering occurs level by level instead. That is, if no resources that satisfy the filter criteria are found at the next lower level of a branch, filter processing stops.

Using the example in the following diagram:

If the filter looks for resources of the ... Then ...	
LU type (RSTYPE="LU")	No resources are selected because no LUs are found on level 2.
PU type (RSTYPE="PU")	SNAPU1 and SNAPU2 are selected.



Defining the Weight of SNA Group Members

The weight indicates how important a member is to the SNA group. The valid values are 0% through 100%.

If the weight is 100%, the actual state of the member affects the actual state of the group directly. For example, if the member becomes inactive, the group assumes the INACTIVE state.

If the weight is 0%, the member has no effect on the actual state of the group.

If the weight is between 0% and 100%, the effect of the member on the group depends on the state thresholds. See [Defining the State Thresholds](#) in this chapter for information about state thresholds.

You can apply the following two types of weights to the members: fixed and proportional.

Using a Fixed Weight

With a fixed weight, every member included in a line entry has the weight specified in the Weight field.

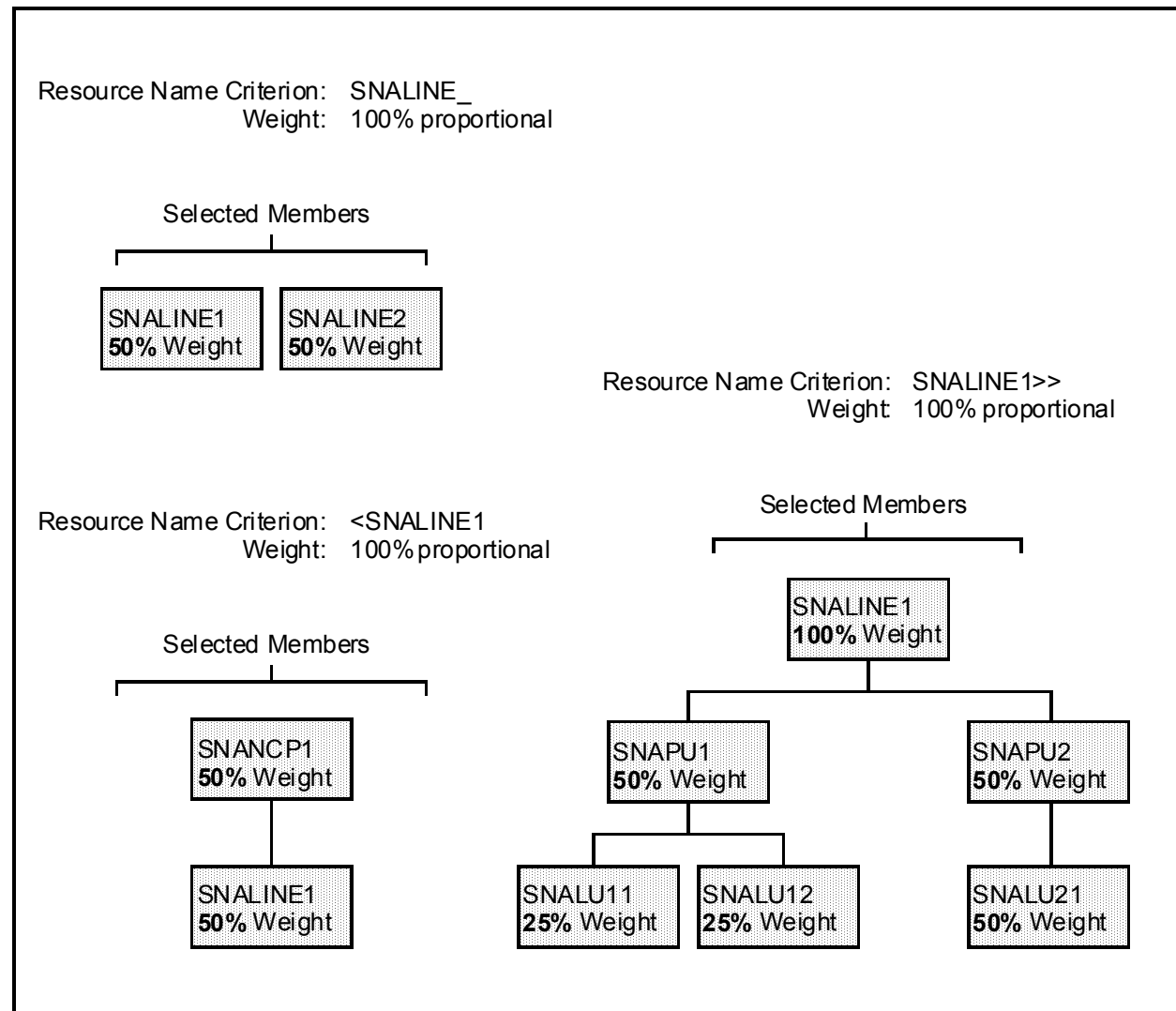
You cannot use a fixed weight if downstream or upstream indicators are used in the selection criteria on that line.

In the following two examples, the weight is 100% fixed:

- If the line entry includes only one member (for example, PU1), the member has 100% weighting in the group.
- If the line entry includes more than one member (for example, PU1 through PU9), each of the members has 100% weighting in the group.

Using a Proportional Weight

You can use the proportional type of weight when the line entry includes more than one member. With a proportional weight, the apportionment of weight to the selected members depends on whether downstream or upstream indicators are used in the selection criteria. The following diagram provides examples of apportionment of a proportional weight.



Displaying the Members of an SNA Group

The selection criteria select the members for the SNA group. Only members included in the SNA network model are selected. Therefore, the members can change if the filter used by the network model changes. The network model filter is set in the AUTOSNACNTL region customization parameter group. See the *Implementation Guide* for more information.

You can use the V (View) action code to display the members selected by the criteria specified on a line. When a downstream indicator is used, only SNA resources one level down from the selected member are displayed. You can, however, explore further by selectively displaying the resources downstream to a member.

Defining the State Thresholds

From the SNA Group Filters panel, press F8 (Forward) to scroll forward to the State Thresholds panel. Use this panel to define how the states of the members affect the actual state and, optionally, logical state of the SNA group.

The actual state of the group may be one of the following: UNKNOWN, FAILED, DEGRADED, STOPPING, INACTIVE, STARTING, and ACTIVE.

The state threshold is set by the specified combined weight of the members that have particular states. The region checks the states in the sequence UNKNOWN to ACTIVE until a threshold is found to be equaled or exceeded. That is, if the UNKNOWN state threshold requirement is satisfied, the group takes on the UNKNOWN state irrespective of whether the other threshold requirements are satisfied. If none of the threshold requirements are satisfied, the group takes on the DEGRADED state.

If an SNA resource selection line on the SNA Group Filters panel finds no members, its weight is added to the combined weight for the UNKNOWN state.

The combined weight of the members also affects the logical state of the SNA group. When a logical state threshold percentage is specified, the region compares the desired state with the actual state of each SNA resource in the SNA group to determine their logical states. The combination of these logical states determines whether the SNA group logical state is OK or not OK. The logical state of the SNA group is then derived.

Note: When a logical state threshold is specified and there is a resource whose desired state is different from the group desired state, automation is not performed on this resource if it is in a logical state of OK.

The mapping of these special logical states is in the SNA Resource Logical State Normalization table (one of the display attribute tables). You can access the list of tables by entering the /ASADMIN.A path.

How the Weight Contributions to an SNA Group State Are Determined

The weight contributions to an SNA group state depend on whether any downstream or upstream indicators are used in the SNA resource name criterion.

If Downstream or Upstream Indicators Are Not Used

If downstream or upstream indicators are not used, the weight applied to selected members can be either fixed or proportional. In the following example:

- The specified weight is 30%.
- The selected members are SNALINE1 through SNALINE3.
- The states of SNALINE1 and SNALINE2 are ACTIVE.
- The state of SNALINE3 is INACTIVE.

The weight contributions are as follows:

If the weight is ... Then the contribution to the group state is ...	
Fixed	60% ACTIVE and 30% INACTIVE
Proportional	20% ACTIVE and 10% INACTIVE

If Upstream Indicators Are Used

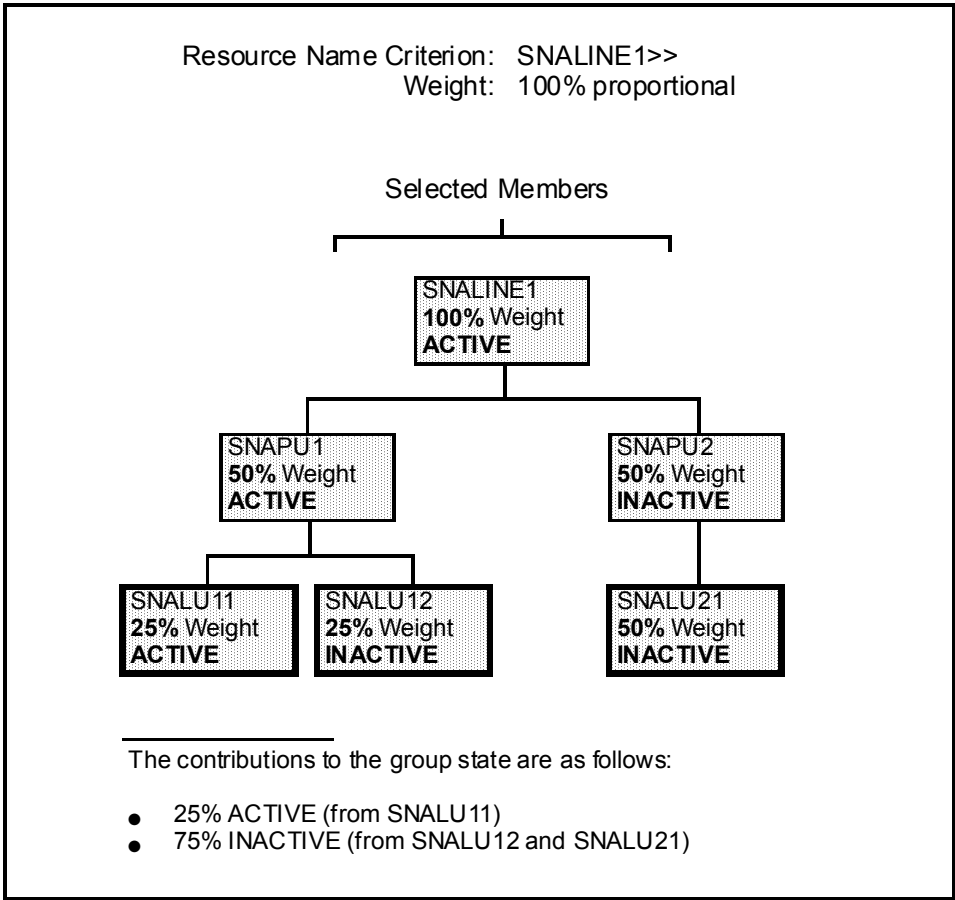
If upstream indicators are used, the weight applied to selected members must be proportional. The weight is equally distributed between the members. In the following example:

- The specified weight is 100%.
- The selected members are SNANCP1 and SNALINE1.
- The state of SNANCP1 is ACTIVE.
- The state of SNALINE1 is INACTIVE.

The weight contributions are 50% ACTIVE and 50% INACTIVE.

If Downstream
Indicators Are Used

If downstream indicators are used, the weight applied to selected members must be proportional. The following diagram illustrates how member states contribute to the status of the SNA group. It shows an example of members selected by using a downstream indicator.



Only the lowest level of SNA resources contributes to the determination of the state of the SNA group at any single branch.

Example

An SNA group contains 10 SNA lines. You want the state of the group to indicate the following:

State	Description
UNKNOWN	The region does not know the state of one or more lines.
FAILED	One or more lines failed.
DEGRADED	One or more lines degraded.
STOPPING	One or more lines are stopping.
INACTIVE	All lines are INACTIVE.
STARTING	One or more lines are starting.
ACTIVE	All lines are active.
DEGRADED	The member states do not satisfy any of the above conditions. For example, five lines are active and five lines are inactive.

You define a 100% proportional weighting distributed across the lines. That is, each line has a weight of 10%.

Note: if you use downstream indicators in the selection criteria, the downstream SNA resources affect the group state. Therefore, one line means 10% of the lines, where the contributions to a group state might come from part of a line.

The following state thresholds satisfy your requirements:

Actual State	Threshold
UNKNOWN	10%
FAILED	10%
DEGRADED	10%
STOPPING	10%
INACTIVE	100%
STARTING	10%
ACTIVE	100%

How the SNA Group Logical State is Determined

The logical state of an SNA group is normally determined using the Automated or Manual Mode Attributes Table (/ASADMIN.A). You can more accurately determine the logical state of an SNA group by specifying a Logical State Threshold on the State Thresholds panel. This threshold determines, from the combined logical state of each resource, whether the SNA group is OK or not OK. If the group is OK, then conceptually the actual state of the SNA group is said to match its desired state. If the group is not OK, then conceptually the actual state of the SNA group is said to be in a state (ACTIVE or INACTIVE) that is different from its desired state. These states are compared to the Automated or Manual Mode Attributes Table to determine the SNA group's logical state.

Example

Assume you have specified 10% as the logical state threshold for the SNA group as specified in the previous example.

The actual state of one SNA line is FAILED, desired ACTIVE. Using the actual state thresholds specified, the actual state of the SNA group is FAILED. As there is a logical state threshold specified, the logical state of the SNA group is determined using the following method:

1. The logical state of the failed line is determined by using the SNA Resource Logical State Normalization Table as displayed here.

```

--- Automation Services : SNA Resource Logical State Normalization Table -----
Command ==>                                                    Function=BROWSE
  
```

SNA RESOURCE ACTUAL STATE	SNA RESOURCE DESIRED STATE	
	ACTIVE	INACTIVE
ACTIVE	OK	NOTOK
STARTING	OK	NOTOK
STOPPING	NOTOK	OK
DEGRADED	OK	NOTOK
INACTIVE	NOTOK	OK
FAILED	NOTOK	NOTOK
UNKNOWN	NOTOK	NOTOK

```

F1=Help      F2=Split      F3=Exit      F4=Edit
F7=Backward  F9=Swap      F11=Panels
  
```

The Actual state of the resource (FAILED) is compared to the desired state of the resource (ACTIVE) to determine the logical state of the resource (NOTOK). In this case, the logical state is not OK.

2. As one NOTOK SNA resource is equal to ten percent, the logical state threshold has been reached and the logical state of the SNA group is not OK.
3. As the SNA group is not OK, it is conceptually known as INACTIVE by the region.

Note: If the SNA group is OK, then conceptually it is known as ACTIVE by the region.

4. The region is in MANUAL mode so the logical state of the SNA group is determined from the Manual Mode Attributes Table. Using this table, if the actual state is INACTIVE and the desired state is ACTIVE, the logical state of the SNA group is ATTENTION.

Implementing the State Change Exits

From the State Thresholds panel, press F8 (Forward) to scroll forward to the State Change Exits panel. This panel enables you to specify two types of exit processes:

- A process that executes before the SNA group is activated. By using this feature, you can add your own tasks that need to be performed before the region attempts to activate the group members.
- Processes that execute on specified state changes. For example, if the SNA group degrades, you might want to invoke a procedure that writes a problem report. You can specify a process to execute on changes to the actual state, the desired state, or the logical state of the group.

Defining the Logging Details

From the State Change Exits panel, press F8 (Forward) to scroll forward to the Automation Log Details panel. This panel contains information about the size of the temporary log for the SNA group (called a **transient log**), the destination of the logged information, and the type of information logged.

Specifying the Owner Details

From the Automation Log Details panel, press F8 (Forward) to scroll forward to the Owner Details panel. This panel enables you to identify up to two people who can be contacted if this SNA group has operational problems.

Implementing the Extended Function Exit

From the Owner Details panel, press F8 (Forward) to scroll forward to the Extended Function Exit panel. The panel enables you to provide additional operator functions. Specify the exit NCL procedure that provides these functions. The procedure is invoked when an operator issues the XF command against the SNA group.

The extended function exit NCL procedure has access to variables with the prefix ZRM or ZRS. See the *Automation Services Administrator Guide* for information about writing exit NCL procedures for products supported by Automation Services.

Displaying an SNA Group on the Graphical Monitor

After you defined an SNA group, it becomes immediately visible on the status monitor if the system image that owns it is active. To enable it to be displayed as an icon on the graphical monitor, you need to create a resource group for it by using the RG action code. You can then attach the resource group to an icon for display on the graphical monitor. See the *Automation Services Common User Guide* for information about how to create different views of the graphical monitor.

Displaying the Status of Included SNA Resources on Icons

To display the status of included SNA resources on an icon, ensure that the attached resource group contains one and only one member, the SNA group.

If you include more than one member in the resource group, the icon will display normally. That is, it will display the status of its members. For example, if the resource group contains two SNA groups, the icon displays the status of the SNA groups and not the status of the included resources.

Maintaining SNA Group Definitions

You can browse, update, copy, and delete SNA group definitions from the SNA Group List panel.

Note: If you only want to hide a definition from the region, set the operation mode to OFF. The definition remains in the knowledge base but is not used.

Managing Messages

The product collects system and VTAM messages. You can use these messages to trigger actions that cannot be handled by the service or resource definitions. You can monitor VTAM messages from the Operator Console Services (OCS) window (message monitor).

Note: If you are running the Unicenter NetMaster Network Management for SNA product in the same region as this product, you also have available a CNM message flow. See the *Implementation Guide* for information about how to set up the CNM message flow.

See the *Automation Services Common User Guide* for detailed information about how to use the EventView component that enables you to perform these functions.

Using Rule Sets to Manage Messages

To control message delivery and automation actions, you define rule sets and rules. You can access lists of these definitions from the Define Event Rules menu. Enter the `/EADMIN.R` path.

Besides managing messages, rule sets can also execute rule set initialization actions and timed actions.

After you define the rule set, you activate it by associating it with an active system image. To access the system image list, enter the `/RADMIN.I` path. Identify the rule set in the EventView Ruleset to Activate field on the System Image Definition panel.

Controlling Message Delivery

You use rule sets and their rules to control the delivery of messages. You can specify the following actions for selected messages:

- Suppress the delivery of messages
- Specify to where messages should be delivered
- Specify how repeating messages are handled

You use the following fields to specify message delivery controls:

- Default Message Delivery field on the Ruleset Description panel – use the field to specify the first level of delivery control for all messages.
- Message Delivery panel of a message rule – use the fields to specify the second level of delivery control for specific messages.

See the *Automation Services Common User Guide* for information about how to define rule sets and message rules.

Automating Actions in Response to Messages

You use message rules to automate actions that are dependent on the arrival of certain messages. You can:

- Modify the delivered message
- Execute commands and processes

You use the following panels to specify actions:

- Message Modification and Message Actions panels of a message rule
- Message Parameters and Rule Actions panels of a message group rule

See the *Automation Services Common User Guide* for information about how to define message rules and message group rules.

Consolidating VTAM Messages to a Single Console

You can use the message monitor as a consolidated console in that you can monitor VTAM messages from different connected systems on it.

Note: The consolidated console is fully functional in focal point regions only. In subordinate regions, only local message traffic is visible.

In order to monitor messages on the consolidated console, you must define message profiles to select the messages you want to monitor. The defined profiles are global. That is, profiles defined in one region are available to the other connected regions.

A message profile determines which messages are displayed on a consolidated console. Different users can have different sets of message profiles. When you access the consolidated console, your message profiles determine your view of the message flow.

Defining Message Profiles

Define message profiles from the Message Profiles panel. To access the panel, enter the `/EADMIN.C.M` path. See the *Automation Services Common User Guide* for detailed information about how to define message profiles.

When you define message profiles, you should note the profile ID and job criteria considerations in the following sections.

Profile ID

Each message profile has a unique ID. You cannot use the value 2 as the profile ID. This value is reserved for internal use by the region. You specify the ID on the Profile Details panel.

Only profiles that have IDs corresponding to those set in the CCONSOLIDATN parameter group are available for use in the local region. To access the list of parameter groups, enter the `/ICS` shortcut.

Job Criteria

The job criteria restrict the messages that can be displayed to selected SNA resources. You specify the criteria on the Job Name Specification panel.

Activating Message Profiles

A created or updated message profile is not current until you activate it. To activate message profiles, enter **ACTIVATE** from the Message Profiles panel. The action activates all defined message profiles and can degrade system response time. You should perform this action when the systems are not busy.

Monitoring and Controlling SNA Groups

This chapter describes how to monitor and control services and SNA groups on a day-to-day basis. It assumes that the operations environment has been established with an active system image and the network is operating normally.

Monitoring SNA Groups

By using the SNA network summary display, you can manage the individual SNA resources. By creating the SNA group and service definitions, you put your network operations in a service-driven operations perspective. From this perspective, the amount of information you need to monitor is reduced. To manage these groups and services, you use the status and the graphical monitors.

You can monitor the services and SNA groups from any of the connected regions. Logs can be used to display the messages associated with a service or group and therefore with system activity, and authorized users can define filters and profiles that enable the viewing of information about specific services and groups. From an SNA group, you can display the status of the resources it contains.

The product provides the following customized status monitors: service monitor and resource monitor.

See the *Automation Services Common User Guide* for detailed information about the status and graphical monitors.

Accessing Status and Graphical Monitors

To access the:

- Service monitor, enter the **/SMON** shortcut.
- Resource monitor, enter the **/RMON** shortcut.
- Graphical monitor, enter the **/GMON** shortcut.

Here is an example of a status monitor panel.

SOLVPROD----- Status Monitor : Resources -----SOLV11-0001							
Command ==> Scroll ==> PAGE							
S=Status L=Log D=Display A=Act T=Term DB=Database ?=List Cnds							
System	Class	Resource	Desired	Actual	Mode	Logical	Ovr
SOLV08	SNAGRP	CONTEST	ACTIVE	UNKNOWN	MANUAL	UNKNOWN	DSA
SOLV11	SNAGRP	AYSNAGROUP	ACTIVE	UNKNOWN	IGNORED	OK	
SOLV11	SNAGRP	FIRSTONE	INACTIVE	INACTIVE	MANUAL	OK	DSI
SOLV11	SNAGRP	GR#SNA#GROUP	ACTIVE	ACTIVE	MANUAL	OK	
SOLV11	SNAGRP	SECSTONE	ACTIVE	UNKNOWN	MANUAL	UNKNOWN	
SOLV13	LOGICAL	CONTESTADOR	INACTIVE	ACTIVE	MANUAL	ATTENTION	DSI
END							
F1=Help F2=Split F3=Exit F4=Return F5=Find							
F7=Backward F8=Forward F9=Swap							

Here is an example of a graphical monitor panel.

SOLVPROD----- Graphical Monitor -----ACCOUNT									
Command ==>									
<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <div style="text-align: center; border-bottom: 2px solid black; padding-bottom: 5px;">SOLV1</div> <div style="text-align: center; padding: 5px;">DSC:MAIN SOLV1 ICON</div> <div style="text-align: center; padding: 5px;">ACT:INACTIVE LGS:FAILED</div> </div> <div style="border: 1px solid black; padding: 10px;"> <div style="text-align: center; border-bottom: 2px solid black; padding-bottom: 5px;">SOLV2</div> <div style="text-align: center; padding: 5px;">DSC:MAIN SOLV2 ICON</div> <div style="text-align: center; padding: 5px;">ACT:INACTIVE LGS:UNKNOWN</div> </div>									
F1=Help F2=Split F3=Exit F4=Return F5=Panel									
F9=Swap									

Managing SNA Resources in SNA Groups

To list the SNA resources belonging to an SNA group, enter **Z** beside the group. From the displayed list, you can issue commands specific to SNA resources.

Example—Monitoring
Network Operations
From the Service
Monitor

This example shows how you can respond to a service problem.

Assume that you have created a number of service definitions, which your region is now managing. You want to ensure that the managed services are operating normally. You enter the **/SMON** shortcut to access the service monitor to view their status.

The services have been behaving normally for some time. Suddenly, you notice that one of them turns yellow, indicating that it has degraded. One of its resources might have failed. To investigate the problem, proceed as follows:

1. Enter **Z** beside the service to list its members. You notice that one of the SNA groups is displayed in yellow, indicating that it has degraded.
2. Enter **Z** beside the group to list its resources. You notice that an SNA line is displayed in red, indicating that it has failed.
3. Enter **B** (or **S**) beside the line to find out what caused it to acquire the FAILED state. The message is displayed in the Reason field on the SNA Resource panel.

If you require more information, you can use commands to isolate the problem further.

You can also enter **L** beside the degraded SNA group to view its transient log for further hints about the cause of the problem. Find the message that indicates the failure of the SNA line. You can jump from the transient log to the activity log to find out what was happening around the time when the line failed. Enter **L** beside the message.

4. Review all the information available to you, and correct the problem. If everything is correct, the SNA line, SNA group, and service will turn green, indicating normal operation.

Removal of Members From SNA Groups

Sometimes, you might want to remove an SNA resource member from the SNA groups so that it does not affect the status of the groups. You can use the following commands to remove a member from all monitored SNA groups and then restore it to them later:

Command	Function
RMV	Removes an SNA resource from all SNA groups.
RST	Restores a previously removed SNA resource to all SNA groups.

Important! *If a restored resource was included in a group as a result of a >> downstream indicator, the group will not rediscover it. To restore such a resource, you can use the BLD or BLDALL group command.*

Controlling SNA Groups

You can issue commands to perform various actions from the status and graphical monitors, depending on your authority level.

You have available to you all the common commands registered in the region, such as activate, terminate, and override commands. You can use these commands on services and SNA groups.

In addition, the product provides specific commands for SNA resources.

Enter ? beside a service, SNA group, or SNA resource to find out what commands are available for it.

See the *Automation Services Common User Guide* for information about the common commands.

Controlling the System Image

The region loads a user-specified system image during region initialization. The image is identified in the AUTOIDS parameter group. You can access the list of parameter groups by entering the **/ICS** shortcut.

During operation, you can:

- Use the GLOBAL command to change the operation mode of the image.
- Use the LOAD command to change the image.
- Use the SHUTSYS or SHUTFORCE command to shut down the resources in the image.
- Use the STARTSYS command to restart the resources in the image.

See the *Automation Services Common User Guide* for detailed information about how to use these commands.

Monitoring Messages

To view VTAM messages, enter the **=O** path. If the lower right of your screen is not displaying CC ON or CC PND, enter **CCON** to change the monitor to a consolidated console. The messages you see are determined by enabled message profiles in your user profile.

To change your view of the messages, enter **PROFILE CC**. You can then change the status of the message profiles.

See the *Automation Services Common User Guide* for detailed information about how to use the consolidated console.

Monitoring Alerts

To view alerts, enter the **/ALERTS** shortcut. An alert is generated when a defined service or SNA group, or a discovered SNA resource changes its status. Alerts are displayed in descending order of severity.

On the alert monitor, you can:

- Browse the actions recommended for an alert
- Add notes to an alert for future reference
- Browse the alert history log for any recorded past experiences with an alert

See the *Automation Services Common User Guide* for detailed information about how to use the alert monitor.

Variables

Variables enable you to obtain information about an SNA resource, access knowledge base data, find out about the status of services, SNA groups and non-SNA resources, and extract information about messages.

This appendix describes the SNA resource variables. See the *Automation Services Common User Guide* for information about the knowledge base, status, and message variables.

SNA Resource Variables

Use the variables listed in the following table to retrieve data about an SNA resource.

You can use the variables to pass values to the processes and NCL procedures invoked from SNA resource models.

Variables	Description
&ZRSDESC	Contains the description of the resource.
&ZRSDOMAIN	Contains the name of the VTAM SSCP that owns the resource.
&ZRSSTATUS	Contains the desired state of the resource.
&ZRSINREC	Contains the recovery status of the resource: NO or YES.
&ZRSMAJNODE	Contains the name of the major node that owns the resource. However, if the resource itself is a major node (as indicated by the &ZRSRSTYPE variable), this variable contains the type of the major node.
&ZRSMODEL	Contains the name of the SNA resource model associated with the resource.
&ZRSNETID	Contains the ID of the network to which the VTAM domain belongs.

Variables	Description
&ZRSRNAME	Contains the name of the upstream (superior) resource.
&ZRSRPTYPE	Contains the type of the upstream (superior) resource.
&ZRSREASON	Contains the reason for the resource state. The state might be set when the resource is discovered or might be set as a result of a state change caused by the receipt of a message.
&ZRSRNAME	Contains the name of the resource.
&ZRSSTAMP	Contains the time when the resource was last updated, in the format <i>yyyymmddhhmmss</i> , where: <ul style="list-style-type: none">■ <i>yyyy</i> is the year (for example, 2001)■ <i>mm</i> is the month (for example, 01)■ <i>dd</i> is the day of the month■ <i>hhmmss</i> is the time of the day
&ZRSSTATUS	Contains the actual state of the resource.
&ZRSRSTYPE	Contains the type of the resource.
&ZRSUSRTAG1 through &ZRSUSRTAG5	Contains the user-defined resource tags.
&ZRSVSTATUS	Contains the VTAM state of the resource.

SNA Resource Message Routing Codes

The region intercepts PPO and CNM messages and resends them with specific MVS routing codes.

This appendix describes these routing codes.

Message Routing codes

A resent PPO or CNM message may have the following routing codes:

Routing code	Description
17	Indicates an SNA resource message.
18	Indicates that the job name associated with the message is the SNA resource name.
19	Indicates that the message is the response to an operator command.

Note: If a message is not assigned a routing code of 18, it indicates that the SNA resource name has not been determined. The region will process the message word by word to find a match with an SNA resource name.

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